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# Price Trends for Honey

By H. F. Wilson,
Chairman American Honey Institute Finance Committee.

HAVING BEEN buffeted about by an economic depression and a period of unprecedented drought, we are still looking for that elusive prosperity that has been hiding just around a still unlocated corner. Normal crops and predepression prices would quickly locate the corner for our beekeepers, but although normal crops may come in 1935, there is probably not much chance for any great increase in honey prices for several years, and it may be that in the adjustment we will have to accustom ourselves to a new price schedule that will average lower than we would like.

There are several important factors that will have a deciding influence upon future honey prices, and our beekeepers in general will do well to keep an eye to the windward.

A recent study of "Wisconsin Farm Prices" has been presented in bulletin form by the Department of Agricultural Economics of the Wisconsin College of Agriculture* and includes a report on the state average price per pound of comb and better grades of extracted honey for the years 1855 - 1930 by months and years. If one were optimistic and did not investigate the figures from which these data are compiled he might believe that the average price for Wisconsin honey in normal times should be 13 to 14 cents per pound. For a study of these records shows that during the period from 1878 to 1917, the state average price was 13.3 cents per pound. During two periods the average price was higher than 20 cents per pound. Some condition developed in 1873 which caused a price advance, and in 1874 the state average price was 25 cents per pound. This was followed by a sharp decline in 1879, and a slight increase up to 1882; then came a steady price decline which reached its lowest point of 8.2 cents in 1899. The average price from 1900 to 1910 was 11.8 cents. From 1911 to 1917, the average was 14.7 cents. Then the price skyrocketed to the unusual high average of 32.3 cents in 1920, as a result of propaganda to replace sugar with honey during the war. But a steady and rapid decline began in 1921 and reached the lowest point on record in 1932, when quantities were sold as low as 4 cents wholesale in large lots, and five-pound pails sold generally at 35 cents. In the same year, ten-pound pails were retailed at ranges of 60 cents to $1.25. (Some beekeepers were reported selling ten pounds for 50 cents when the customer brought containers. Comb honey was commonly retailed at 10 cents and some unverified sales were reported as three sections for 20 cents.)

A report of "Weighted price to producers for extracted honey" is also given which shows a decline in price average from 15.1 cents in 1922 to 7.6 cents in 1932.

Wisconsin is situated in one of the main honey producing regions. Therefore, I consider that the data at hand can be used to point out what is going to happen in most of the other beekeeping regions of the United States. In considering the average state price before 1917, we must take into consideration that the higher prices were brought about by comb honey sales. The state average prices at the present time are much lower because, in the first place, there is not a great deal of comb honey produced; secondly, the prices for it are unusually low because people are more and more becoming accustomed to using extracted honey.

Actually, during the period from 1878 to 1917, 9 cents a pound for extracted honey was good, and the average price was around 7 cents. In the period between 1917 and 1932, we cannot find much that will give any help in predicting prices in normal times. Most agricultural commodities reached a new high around 1919-1920, and then skidded to a depression low in 1932. None of these commodities, unless very scarce, will bring anything like that figure in the near future. Even though government control may boost commodity prices to another high point, it can be only temporary, and will soon drop back to normal level, because when any commodity costs too much, the majority of people cannot or will not buy. But the period that is of most interest to us at this time is really the future.

So, let's look over the past and see what we may predict. During the first period of honey production, the prices of honey throughout the United States varied from 2½ to 7 cents for dark honeys, and 4 to 13 cents for white clover and alfalfa, with an average of 8 to 8½ cents for the high and 5 to 6 cents for the low. Recent sales in Wisconsin have been at from 6 to 8 cents in large lots, and practically all of the honey is now out of the hands of the producers. Those who are holding honey at 8 cents are finding it difficult to get their price, even though a great shortage of honey exists throughout the United States. It is quite evident, then, that about the best price we can hope for will not exceed 10 or 11 cents, and that the average will be 7 to 8 cents, and part of the time less than that.

*Mortenson, W. P., Erdman, H. H., and Draxler, J. H., Research Bull. 119, Wis. Agrl. Exp. Sta., Nov. 1933.

Commercial beekeepers are going to have to set up their production on the basis of 6 to 8 cent honey. And it may be even difficult to maintain those prices. There is one big factor that will to a large extent prevent local associations from increasing prices in their localities. Chain store competition will to a large extent continue to set retail prices, even in country districts. And honey prices must be in line with other commodities if large quantities are to be sold. Good honey will be available some place in the United States at 6 cents per pound, and this will permit the chain stores to buy honey in five-pound pails for not more than 35 to 40 cents, which will in turn permit them to sell at 50 to 55 cents. Therefore, the regulation price for the five-pound pail will not exceed 60 cents, except in periods of great shortage. This will mean that beekeepers who sell their honey locally will have to take from 50 cents for the five-pound pail, to perhaps 90 cents to $1.25 for the ten-pound pail. There will, of course, be certain variations in price, according to the surplus crop available at any time.

The present indications are that crop production has been steadily increasing, although there is perhaps a decrease in the number of bees and beekeepers at the present time. But more new beekeepers are started all the time, and the larger beekeepers are increasing their holdings. This simply means that most of the time there will be more honey in the market than can be sold, unless prices are held at a low level.

There is one condition that can improve the situation generally both for small beekeepers and for those who produce in carload lots. That one helpful factor is American Honey Institute. Of course, it is too bad that the Institute has to keep continually soliciting funds for its maintenance. I am sure that if you beekeepers would take the trouble to inform yourselves on the accomplishments of the Institute, every single one of you would be supporting it financially, as well as looking for new members, not to lighten the load for any individual, but to increase the field of publicity which can be definitely shown to have moved honey that would now be left in the hands of the producers.

Marketing of honey has been one of the big problems of the beekeeping industry for fifty years. This problem will continue for the next one hundred years. And the commercial beekeepers of the United States must get together and cooperate in producing honey publicity, or continually face the problem of 4 and 5 cent honey. If American beekeepers do not awaken to the situation, 4 and 5 cent honey will be more common for the next ten years than will 6 cent honey. And the small beekeepers must face 7 and 8 cents per pound for retail local sales, unless they likewise cooperate in creating publicity with greater distribution and wider uses of honey.

I know there are a lot of beekeepers who will not see the point, because there is no surplus honey on hand at this time. And many will also not be able to appreciate that had it not been for the American Honey Institute, honey would still be left in the hands of beekeepers in large quantities. Furthermore, any beekeeper who received more than 5 cents per pound for his honey in 1934 and 1935 should appreciate that he did so because of the work of the American Honey Institute.

Times are difficult—money is hard to get—and there is no honey to be sold. So why should anyone make a special effort to sign up for the Institute? I would like to take the liberty, if I may, to point out to our beekeepers that we have been making a close study of the price situation covering the past 50 to 60 years. We have also made a study of the customers buying honey during the past five years. We find very definitely that a great group of new honey consumers has developed. But this type of consumer is affected to a large extent by advertising, and it shifts its buying to a large degree as a result of what it reads. It should be perfectly evident to every old-time beekeeper that the number of colonies of bees has increased, and also that honey production has increased. The inquiries coming to our office indicate that there will be continual additions to the list of beekeepers and also that many commercial beekeepers will add to the holdings they now have. Greater production and in some years unusually large crops make it absolutely essential that the people of the United States be continually reached with publicity so that the per capita consumption of honey will increase with greater production.

Unless a large number of beekeepers show a willingness to support the Institute, those who are trying to see it maintained because of its recognized value to the industry, will become discouraged, and American Honey Institute will drop out of the picture as has every other cooperative effort so far started.

Right now the most impressive honey advertising campaign ever started is about to be discontinued because during January and February the normal expected memberships to the Institute did not come in. There is not enough money available to run the Institute beyond May 1.

**Shall we give up?**

# New Book On Swarming

"Swarming, Its Control and Prevention" is the title of a new cloth bound book of 96 pages written by L. E. Snelgrove. The book is published by the author at Bleadon, Weston-super-Mare, England. The price is one dollar.

Here in America we have many books on bees but few of them confine their attention to a thorough consideration of some one phase of beekeeping. This book by Mr. Snelgrove deals with a subject of great importance to every one who depends upon honey production seriously. The control of swarming is one of the most vital problems and upon its success depends much of the beekeeper's prosperity.

Since the entire book is devoted to swarming and its control, an exhaustive treatment of the subject is possible. Various well-known methods are described in detail and their advantages or defects pointed out. Due consideration is given the methods advocated by such Americans as Demaree, Demuth and J. E. Hand. To this is added the methods practiced successfully by the author of the book.

The chapter on causes of swarming reviews rather fully the literature on this subject and outlines the different theories. Artificial swarming and utilization of natural swarms are treated at length. On the whole the book covers the subject quite fully and should be in the library of every student who wishes to keep abreast of the literature of beekeeping.

The book is well bound, printed on good paper with large clear type. It is advertised by the author elsewhere in this Journal.

# Our Cover Picture

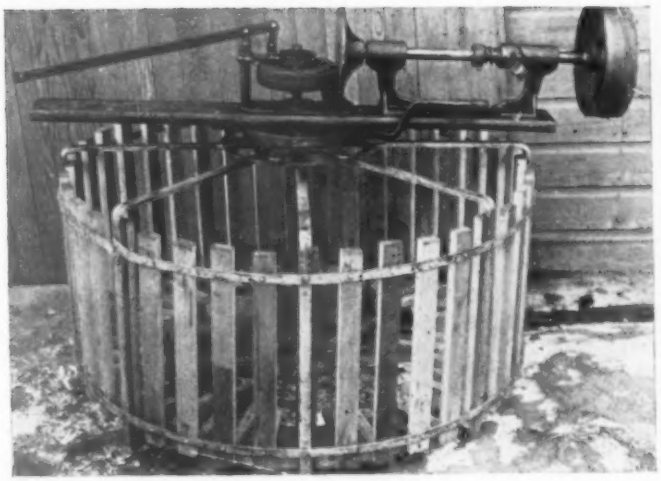
Wouldn't this be a riot on the news stand? No one but a died-in-the-wool beekeeper would know what it is all about. But, beekeepers, isn't it a dandy picture of coiled larvae and of brood? Good, healthy brood, too, that will give workers fit for the job ahead. Hives full of its like in May always give a good account of themselves.

# "Bee Lines"

The "quickest" way to keep from weeping when peeling onions is to take a bite of bread into the mouth and hold it there until the "operation" is over.

# Transforming a Basket Extractor Into a Radial

By Leroy F. Baxter,
Nebraska.



I HAVE an eight-frame extractor with 12-inch baskets which I remodeled into a radial type. We have given this machine a thorough tryout this past season, extracting approximately 60,000 pounds of honey; we are so well pleased with it we thought possibly others would be interested in a description.

The swinging baskets of the original extractor were taken out and wooden slats for spacing and holding the frame substituted. These slats are 18 inches long, 1⅝ inches wide, slightly beveled on the inside edges. They are evenly spaced and bolted to the hoops that bind the reel. They were evenly spaced between each section which vary a little, five to a section, or forty complete, thus making a forty-frame extractor. They are bolted on with 3/16 inch round-head, stove bolts, 1¼ inch long in holes drilled about 3⅛ inches center to center. This leaves a frame space of about 1-9/16 inches wide with plenty of clearance for the end bars for ease in loading and unloading the extractor.

The bottom support for the frames consists of a wooden circle sawed out of a wide board, and is in four sections, 5 inches wide. The outer edge is sawed on a radius of 18½ inches and the inner edge 13½ inches. Common 12-inch sheeting is used. This bottom is raised with blocks of the same lumber and fastened with a 5/16 inch bolt in the center on each of the eight radius arms of the reel.

The bottom spacers are wooden strips ¾ inch square, 6¼ inch long, nailed to the bottom circle and centrally spaced to each side strip. The inside projections are a little wider than the small end of the end bars and hold the frames centrally with the machine so the honey will throw from both sides at once.

The clearance between the circular bottom and the upright side pieces is ⅝ inch. This is for the projections on the top bars.

The above change was made at a cost of about $1.25 for lumber and bolts.

The variable speed mechanism was harder to make and cost about $6.75 but I consider it a great improvement and it ought to be on every machine. The cost would have been less had we known how to go about it without having to cut and try to rebuild parts.

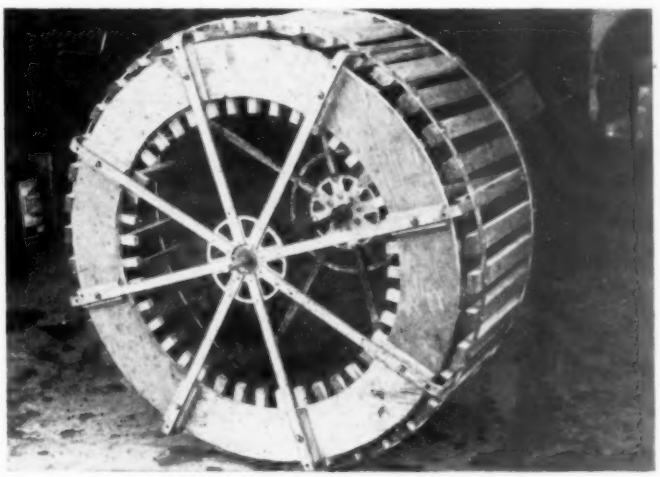
First, we had to get a longer shaft for the reel. This required 33½ inches for length instead of 30¾ as in the old shaft. We secured this in an old steering wheel shaft from a car. Next, a key seat 4½ inches long was cut in the upper end and a key securely fastened in it. The lower end was turned down to fit the bottom bearing.

Now, to raise and lower the fiber friction wheel for varying the speed, it was necessary to fit a grooved collar in which a shifting fork could operate. This was turned from a piece of 3-inch shaft and then riveted on to the fiber wheel, having a ¾ inch hole first bored through its center. Two quarter-inch wagon box rivets were used for fastening together. (Welding was unsuccessfully tried.)

A key way was then cut through both pieces to allow shifting up and down over the key in the shaft.

A shifting fork was made from an old connecting rod by cutting off the bearing end and welding a U-shaped fork of quarter-inch square steel rod to work in this grooved collar. A piece of 13/16-inch shaft 6 inches long was then made for a guide for this fork to slide on. The wrist pin end, with its lock bolt, keeps just the right tension to hold square and in any position without any other locking device.

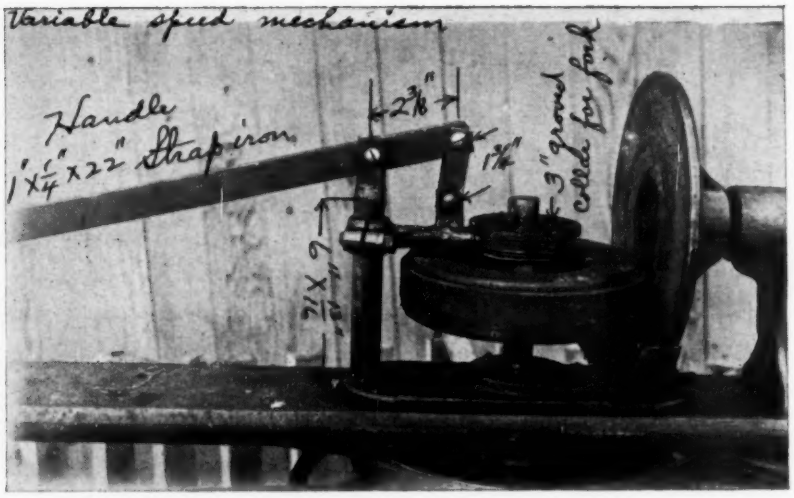
The lower end of this 6-inch shaft is turned down to ⅜ inch and threaded and it replaces the cap screw holding the bearing plate. To the upper end is welded a clevice of light iron



Entire remodel shown in picture at top of page.

The lower, left, picture shows a bottom view. If the pictures are used to help the description, a good idea of the whole remodeling plan is obtained.

Just turn the page for a picture of the variable speed mechanism.




The variable speed mechanism. The dimensions and description of parts give a clear notion of the construction.

for a fulcrum or bearing for the shifting lever.

This lever is a piece of strapiron 1x¼x22 inches. Two quarter-inch holes were drilled in the end 2⅜ inches apart, connecting to the shifting fork by means of a link 1¾ inch as shown in the picture.

Thus the fiber pulley can be shifted to the center of the driving plate for reducing the reel speed when starting the heavy load of honey and as the honey throws out and danger of breaking out the combs lessens, the speed can be increased by shifting the fiber pulley downward towards the outer edge of the driving plate.

With this increased speed, the combs can be thrown much dryer because the extractor can be speeded much faster than it is possible if one depends on slippage alone to vary the speed. The spring tension against the fiber pulley is never changed, but by shifting it with the lever from upper central position down to lower and outer edge of the driving plate, the reel speed is more than doubled. Thus it is impossible to get as sudden a change of speed by starting in low as it is without the variable speed. In either case the speed pickup is governed entirely by the spring tension against the fiber pulley but with the variable speed mechanism one has a range of speed more than twice as great as without it. Without this variable speed device, we found that we could not hold down the speed without throwing the reel out of gear and allowing it to coast and this took a lot more attention and caused a great deal more breakage. This other way we seldom broke out a comb.

I was afraid that the ¾-inch reel shaft would not stand the strain of carrying a load of forty frames of honey, or the bottom of the can without reinforcement, but it did. The reel weighs eighty-six pounds and when loaded with forty combs heavy with honey, the weight is boosted up around 400 pounds, but after a season's extracting, there is no signs of weakening anywhere.

# Rally 'Round the Institute

By Wesley Osborne,
Treasurer Ill. Bkprs. Association.

Have you ever watched one of the modern fast trains roar through town and note how it draws after it a maelstrom of small rocks, pebbles, dust? If you were standing close enough, you might have felt the tug of its progress as it sought to carry you along with it.

There you have a perfect picture of the working of the American Honey Institute. The train maintains its speed through the fuel fed to the locomotive, and as long as the fuel holds out, the train keeps on schedule. The American Honey Institute depends on contributions from beekeepers to maintain its fuel supply, and progress is made according to the way we maintain the supply. Let us keep enough fuel on hand to maintain full steam ahead; disregard all the rules of safety, get as close to the track as you can and let the momentum of the Institute pick you up and whirl you along to bigger and better honey markets. Do not be satisfied merely to be picked up and carried along, put forth your own power and help maintain and increase the speed, rather than be a dead load for the Institute to carry.

Did you ever feel as though one of those big trucks you meet at high speed on the highway would pull you backwards after it? Did you ever think how much less gas it would take to maintain your speed if you could travel close enough behind it to take advantage of the suction created by its passage? Well, we can get in as close behind the Institute as we wish without danger unless we would run out of honey to supply the demand.

The Institute attains full speed during the summer and fuel comes in more or less rapidly until January and then what might be termed a "dearth of nectar" ensues until June, when contributions again start to pick up. This is natural because the beekeepers' harvest begins then and the last of it is out of the way by January. Now, the thing for us to do, is to try to bridge this period, so fuel may be had to maintain the program at full speed. Perhaps the best way would be to pattern after our bees and store up fuel during the harvest to carry over the lean months.

It seems almost beyond belief that any beekeeper should fail to recognize the benefits he receives because of the Institute and yet we find only about one thousand beekeepers contributing to its support in 1934. Instead of one thousand, there should be ten thousand contributing on the dollar a ton basis. When a beekeeper sells all his honey to use in turning out honey baked hams, and at a cent and a half more than the market, tell me, did it pay that beekeeper to give his ten dollars to the American Honey Institute?

Is there not someone in each local association who will, as a part of their contribution to the success of the Institute, undertake to interest beekeepers in this great cause for the good of all and see that they contribute their dollar per ton per year or not less than a dollar in any case? Surely one per cent is a small price to pay for the advertising program maintained by the Institute, and with many it will figure nearer one-half of one per cent on last year's crop, on the prices obtained.

Money contributed to the Institute pays big dividends and let's go after them. If we have been putting up only a dollar a year, when our production runs to several tons, let's fix that first, then go out after more contributing members. The good the American Honey Institute can do for you, depends on the good you do for the Institute.

**So, let's go!**

# From Russia

We are in receipt from Russia of an 118 page pamphlet on foulbrood. We are sorry to say that we cannot read it, as we don't know even the Russian alphabet; but we know what it is written of, because the little book contains a number of illustrations showing ropy foulbrood in different stages. We are glad to see the progress of beekeeping going on and send our congratulations to our Russian friends and scientists.

C. P. Dadant.

# A Comparison of Methods and Time of Making Increase Among Bees

By Erdman Braun,
Dominion Experimental Farm, Brandon, Manitoba.

THE DIVISION of overwintered colonies, into two or more parts, to increase the number or to raise the production average, has been practiced for many years. The principles involved may be briefly outlined:

1. Select only strong colonies with vigorous queens and an ample supply of young bees.
2. The parent colony should attain its optimum field force of bees at the beginning of the honeyflow, therefore one or two divisions will yield greater profits than three or more from a single colony.
3. Introduce laying queens, instead of using queen cells for spring increase. The queens will pay ample returns for the additional investment.
4. Provide each increase with enough bees to prevent chilling the brood.
5. Supply at least one comb of good quality honey and an ample supply of pollen to the increase. If honey is not available, feed sugar syrup.
6. Close with grass or screen the hive entrance of the spring increases for enough time to assure re-orientation of the transferred bees in their new location.

### The Value of Increases

The winter loss is very high in the prairie provinces, varying from 5 to 80 per cent, with an average of approximately 25 per cent. This loss may be replaced either by dividing the stronger overwintered colonies or by the purchase of package bees. The latter method is the most common. The dividing of colonies is not practiced to any extent in commercial apiaries in Manitoba and the inference is that there is not enough information regarding the time and method of making increase.

Swarming is a natural means of making increase, yet most beekeepers realize that losses in yields result from swarming. Approximately half of the normal honey crop is lost when a colony swarms. The value of artificial increase as compared to increase by swarming may be summarized:

1. To serve as a means of swarm control.
2. To replace loss in the apiary.
3. To increase the number of colonies so as to utilize equipment to the fullest capacity.
4. To raise the production per colony, spring count.
5. To conserve the finances of the beekeeper.

**SUMMARIZING 6 YEARS RESULTS ON COMPARISON OF DIFFERENT METHODS AND TIMES OF INCREASE**

| Year | Time Divisions were made | | Method of Making Increase | | | | | Check colonies not divided |
|---|---|---|---|---|---|---|---|---|
| | | | A | B | C | D | E | |
| | Early | Late | showing production of honey in pounds | | | | | Yield |
| 1926 | May 21 | May 28 | 389.50 | 304.75 | 531.75 | | | 221.25 |
| 1927 | June16 | June21 | 319.75 | 432.25 | 500.25 | | | 301.00 |
| 1928 | June22 | July 11 | 473.00 | 369.00 | 471.75 | | | 203.25 |
| 1929 | May 30 | June17 | 534.00 | 582.00 | 541.00 | 1072.25* | | 346.50 |
| 1930 | May 26 | June 6 | 630.50 | 219.00 | 471.50 | 343.75 | 431.25 | 561.25 |
| 1931 | June10 | June19 | 440.00 | 295.25 | 393.50 | 490.50 | 452.50 | 312.50 |
| Total production of parent colony plus increase | | | 2786.75 | 2202.25 | 2909.75 | 1906.50 | 883.75 | 1945.75 |
| Number of colonies in the experiment | | | 12 | 12 | 12 | 8 | 4 | 13 |
| Average production of parent colonies plus increase | | | 232.22 | 183.52 | 242.47 | 238.31 | 220.93 | 149.67 |
| Average yield of parent colonies | | | 151.62 | 104.66 | 167.68 | 155.68 | 66.56 | |
| Average yield of parent colonies divided early | | | 143.45 | 103.04 | 171.87 | 189.33 | 82.50 | |
| Average yield of parent colonies divided late | | | 159.79 | 106.29 | 180.16 | 225.83 | 50.62 | |
| Average yield from all increases | | | 80.60 | 78.93 | 74.79 | 82.62 | 154.37 | |
| Average yield of increases divided early | | | 90.12 | 100.70 | 91.33 | 107.50 | 218.50 | |
| Average yield of increases divided late | | | 71.08 | 57.25 | 58.25 | 112.83 | 90.25 | |

*Method "D" had four colonies and the check group had three colonies respectively, in all other groups, two colonies were used throughout the experiment.

### A Comparison of Different Methods and Times of Making Increase

Various methods have been tried and with varying results so that it has been difficult to draw definite conclusions. In 1926, the Dominion Experimental Station at Morden began an experiment to determine the most economical time and method of making increase. This experiment was carried out for six consecutive years.

Here is an outline of the time and methods used:

(A) As soon as the colonies became strong in the spring, all capped brood and adhering bees were placed in a new hive on a new stand and a young queen was introduced.

(B) At the beginning of the honeyflow the old queen with two combs of brood and one of honey, and adhering bees were placed in another hive on a new stand and the parent colony requeened with a young queen.

(C) As soon as colonies became strong in the spring, all the uncapped brood and adhering bees were put in another hive on a new stand and a young queen introduced immediately.

(D) Two combs of bees and one of honey and adhering bees were placed in another hive on a new stand and a young laying queen was introduced.

(E) All brood removed from parent colony and placed in a new hive with new queen.

(Please turn to page 239)

## Sweet Clover and the Package Business

Sweet clover has had an amazing influence on the development of commercial beekeeping here in America. Owing to its spread the demand for bees has developed to the point that has made the present package business possible.

It may not be generally known to our readers that the shipment of live bees was first suggested in 1879 and some interest was developed during that and the following season. However, there was so little demand, except in seasons following severe winters when losses were heavy, that it hardly seemed worth-while for breeders to advertise live bees. Add to that the difficulties of getting the bees to their destination alive and we see how it happened that the matter was dropped from the pages of the bee magazines for a period of about thirty years.

It was not until about 1911 that an occasional small ad for live bees in cages began to appear again. By this time the spread of sweet clover into the Missouri Valley and the Plains Region began to offer promising bee pasture and led to a new demand for bees. As the area in which sweet clover was used extensively as a farm crop was extended the demand for bees increased. The package business has developed along with this spread of sweet clover and has been closely associated in its volume with the new acreage sown.

Thus the beekeeper of Georgia to Texas was vitally concerned by the changes in the farm crops which were taking place in the Dakotas and the western Canadian provinces. As a result honey production has taken on some of the aspects of big business. Bees go north in truck loads to the sweet clover fields and honey goes out by carloads or train loads a few months later.

Although the beekeepers were persistent in advertising the merits of sweet clover in the face of violent opposition, they could scarcely visualize the extent to which it would ultimately influence their industry.

## Trade Barriers

The recent discussion by some Canadian beekeepers of an embargo against the shipment of live bees from the United States raises an interesting question. Who would benefit? The answer is nobody. There can be no question but that Canadian beekeepers have profited greatly from the package bees shipments. Millions of pounds of honey have been harvested in Canada by bees shipped from the United States and the Canadian beekeeper has profited to the extent of the value of this crop above the cost of bees and transportation.

It is hard for one to see any practical benefit to either country from the tariff barriers between the two nations. It would seem that it would be greatly to the advantage of everybody if trade was as free between the United States and Canada as it is now between the states or between the provinces.

Canada produces many things which could come into this country to our great advantage and likewise we produce goods which would be useful to them. The greatest prosperity comes from the greatest volume of trade. Barriers reduce trade and result in a less measure of prosperity.

Certain individuals or groups profit unduly by such restrictions but they do so at the expense of the public as a whole. In the case of the package bee business Canadians are unable to supply this trade because of climatic limitations and such an embargo would bring no benefit to any class in the Dominion while offering a serious inconvenience to the beekeeping industry of their own country.

## The National Flower Show

The national flower show held at Omaha in April furnished a fine example of effective publicity of a well organized industry. No organization has been able to reach the public more effectively than the florists. Their slogan "Say It With Flowers" is worth millions to the industry and the annual flower shows bring their goods to the attention of very large numbers of people.

With a fund of $25,000 for cash prizes the result was a show worthy of any industry and one which offered attraction sufficient to bring the public from a large area to see the display. No better advertising has yet been devised than a well arranged show and flowers lend themselves particularly well to this purpose.

Perhaps the beekeepers can learn something from their fellows in the floral trade. A slogan for us equal to "Say It With Flowers" would not be easy to find. We could hardly say, "Eat It With Honey" although there might something be said for such a suggestion.

We can, however, take advantage of well arranged displays in connection with every fair or exposition, even though we can hardly put up such a one as the National Flower Show.

## Dust Storms

The dust storms in the Middle West have aroused serious apprehension as to the future of the Plains Region. Already it is apparent that a change must be made in the agriculture of the region to avoid permanent destruction of a large area. The constant cultivation of the soil must be abandoned in favor of grazing to prevent so much of the soil being carried away as to result in a rich region becoming a barren waste. We should learn something from the experience of North China where a large population has been impoverished by unwise use of the land. Sweet clover promises to have an important part in the restoration of the West.

## Progress Abroad

The appearance of the book, "Swarming, Its Control and Prevention," by L. E. Snelgrove, reviewed elsewhere in this magazine, calls attention to the fact that much good work is being done in European countries. Numerous books have been published on special subjects relating to beekeeping, as the one on diseases published by the Apis Club. Publications of this kind indicate a live interest on the part of large numbers of beekeepers who may not be primarily commercial honey producers. It is the interest of this kind which is essential to the progress and prosperity of the industry. It is a revival of interest on the part of a larger amateur class which is most needed in this country. The support of this class makes possible the publication of books like those above mentioned.

## Influence of Weather

In 1878 a honey plant garden was carried on at the Michigan Agricultural College as a part of their experimental work. A paper prepared for the Michigan Beekeepers' Convention which concerned this work was published in this magazine in that year. It is of interest now

because of the fact that the yellow sweet clover was reported to be worthless for Michigan while the white sweet clover is recorded as one of the best honey plants.

In view of the general behavior of these plants in regions where sweet clover is important it is hard to reconcile these reports of the two varieties. The question arises as to whether the difference may not have been because of a change in the weather at about the time the later one came into bloom. Since Michigan has a moist climate, sweet clover can hardly be expected to yield as freely as in the dryer regions farther west.

Yellow sweet clover blooms earlier than the white and it may readily happen that weather may not be as favorable for nectar secretion at the earlier date.

## Honey Prospect

Present indications point to a much larger honey crop in this year of 1935 than we have recently had. If this prospect should be realized there is danger of a sag in the price. The activities of the American Honey Institute have resulted in the opening of many new markets for honey and this fact has led the rank and file of beekeepers to assume that market prices would remain steady.

While the Institute has accomplished much, it has scarcely touched the possibilities which might be open if sufficient funds were available. If the beekeeper is to continue to enjoy an increasing demand for his product some means must be found to finance the organization more effectively. No movement can do its best when it is constantly under necessity of solicitation of funds.

It would be unfortunate, indeed, if the production of a big crop should result in a surplus which would break the market. Even a small difference in price per pound amounts to a very large sum in the aggregate. In view of the results thus far obtained from the Institute, it would appear to be a very good investment to provide sufficient funds to greatly extend its usefulness and thus insure new markets to absorb any crop which may be obtained.

As matters now stand a comparatively few are supporting the developmental work for the industry while many who are getting the most benefit are not contributing at all.

## Minerals in Honey

It is of interest to the beekeeper to note that some authorities on human nutrition are advocating the giving of honey to growing children because of the presence of minerals. This is noted especially in connection with discussions of the teeth which too often decay prematurely because of lack of minerals in the highly refined foods in common use.

## Bees in the Orchard

Due to the great increase in the use of bees in the orchards the package shippers may well give more attention to the needs of that market. In the Yearbook of Agriculture for 1934, W. J. Nolan calls attention to the fact that "Since the period for pollination is short and since it may coincide with cool or rainy weather, he (the fruit grower) requires a bee which will fly at lower temperatures and in cooler weather than does the honey producer."

Does not this suggest that some breeder may very well specialize in the selection of bees especially suited to orchard pollination? While many orchardists are depending upon the purchase of package bees for pollination, many difficulties arise. Too often the fruit grower knows nothing of bees, fears their stings and is interested only in their presence among the flowers at the proper moment. In large orchard districts this service may well be left in the hands of beekeepers who are prepared to bring in the bees during the time of bloom and remove them when it is over. This, in many cases, will be cheaper and more effective than the purchase of bees by one who is unfamiliar with their management.

Where the package bees have been received by beekeepers who established them in the orchard and then took them over for use in honey production at the close of fruit bloom a double purpose has been served at a minimum cost. Fruit growers who are also succcessful beekeepers are rather rare. The two lines of business have become so highly specialized that few men are well equipped for both.

## Honey Containers

The United States Department of Commerce has recently issued a circular entitled "Containers for Extracted Honey." This comes as a result of an appeal on the part of leaders in the industry for assistance in reducing the number and variety of honey containers on the market. A general conference of representatives of manufacturers of containers, honey packers, beekeepers and other trade representatives was held at St. Louis, February 27, 1933.

It was brought out that honey is packed for sale in at least 65 different types and sizes of containers. This leads to much confusion on the part of the consumers and adds to the cost of the packer in marketing the product. It was hoped to eliminate the containers which are not economical because of high cost, little demand or other reason.

The whole matter has been under consideration of the Bureau of Standards with the result that it is now recommended that honey be offered for sale only in 5, 8 and 16 ounce and in pint and quart glass jars. For tin it is recommended that only 2½, 5, 10, and 60 pound cans be used. If this suggestion is adopted it will greatly simplify the problem of the container manufacturers and provide increased volume of such sizes to permit lower prices.

The action is an entirely voluntary one and there is no proposal to compel honey packers to follow the recommendations against their will. A large number of honey producers and packers have already indicated their acceptance of the simplified practice recommendation and it is to be hoped that a definite benefit will result from the effort.

## Packages vs. Overwintering

C. H. Gilbert, of the Wyoming Experiment Station, publishes some very significant figures in the March issue of Gleanings. Over a period of four years he has compared an equal number of packages with overwintered colonies in the same apiaries. Surprising as it may seem the average return was greater from two-pound packages than from larger ones.

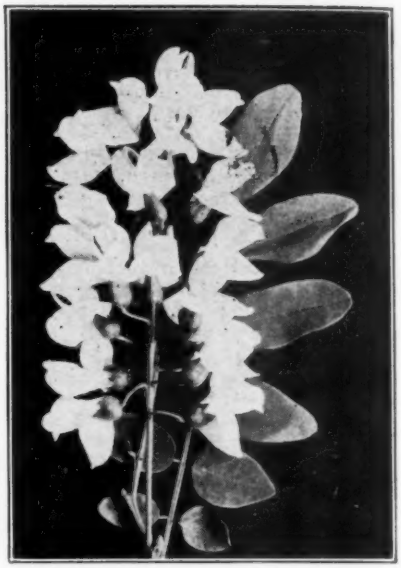
Beekeepers who have considered the killing of all their bees in the fall to be replaced with packages the following spring will be interested in the comparative returns in the Wyoming experiment. The average returns from all packages for the four year period were slightly above 130 pounds per colony per year. At the same time the average for overwintered colonies was a fraction above 178 pounds per colony per year. Two hundred and six colonies were used.

In view of the great interest in this subject it is highly desirable that similar comparisons be made in all important honey producing regions and results be published. Regardless of personal opinion or prejudice the final judgment will come as a result of actual results in the apiary. If beekeepers find it cheaper to kill their bees in the fall and replace them in spring the demand for live bees will reach very large proportions. If in the long term it is found to be more economical to winter the colonies the beekeepers will continue to do it.

It is probable that there will be great variation in results in different locations as Mr. Gilbert suggests. In localities where the flow comes early the package will be at a great disadvantage while making a better showing where the flow comes late. The 48 pounds of additional honey gathered by the overwintered colonies in the Wyoming experiment offers a good argument for saving the bees.

# Black Locust Tree Seed

By Alfred Pering,
Florida.



IN THE December number, page 532, J. H. Sturdevant, of Nebraska, wants to know where and of whom the seeds of black locust may be obtained. When I was a boy on a farm in the south central portion of Indiana, near Indianapolis, some of our friends wrote home to me from Kansas where they had migrated in early married life and earnestly requested me to send them seed of the black locust and black mulberry, that they knew were growing on my father's farm.

Kansas, as most everyone knows, was a comparatively treeless state then as it was being settled up. Very few trees existed and those few were the small, scraggy, thirsty cottonwoods found on the banks of the small streams of the lowlands. Trees, especially the quick growing kinds, were wanted for windbreaks and other purposes. The early cry was "send us something that will come quickly and break this everlasting wind."

One of the early tall story tellers wrote me that during most of the year, he did not need a peg to hang his hat on when he went to his house for dinner. He just put his "beaver" up against the side of his house and the wind held it there until he was ready to wear it in the field again.

On my father's farm, there was a rocky hillside where the locust grew between the rock crevices. These trees escaped the clearing as the ground could not be cultivated. The mulberry trees that were too small to be cut for fence posts escaped too. Some of the best and larger mulberry trees were left for their fruit and for chicken feed.

For five or six years, I would gather seed from these trees, especially the locust seed, since they were the easiest to gather and prepare for mailing to my "wind swept" friends and relatives in Kansas. In later years, some seed was sent to Oklahoma when that territory was open for settlement.

The locust pods were gathered from the trees before they became dry enough to split open and shatter and so be scattered in the tall bluegrass beneath. When dry, I would hull them by hand and send the seeds to those who were wanting them. In those days, we did not have parcel post service for packages. The postage rate was 16 cents a pound and four pounds was the limit for any package. But the seeds were small and light and a very large number of seeds could be mailed even then.

The mulberry must be ripe enough for the seed to germinate when planted and to gather just the ripest ones here and there from the tree, was too much like what the Florida cracker calls "spot picking" of oranges.

Spot picking of oranges is made necessary by a heavy rain after the first orange blossoms appear. Such a rain will cause what is termed the June bloom. Oranges produced from the June bloom ripen later than the late January and February and early March bloom does, so the necessity of "spot picking" as the orange crop ripens.

The ripe berries now had to be crushed, the juice pressed and washed out, and the seed thoroughly dried, before shipping. English sparrows liked those seeds too. I lost my first gathering of mulberry seeds entirely and Uncle Jake and Cousin John had to wait a whole year for their first planting.

For all this trouble, I got no cash but I had the satisfaction of seeing the results of my efforts to break the Kansas winds, several years later when I grew older and paid the Sunflower State a visit. My most vivid recollection was in walking along the sidewalk near the side of cousin John's house in Winfield. That walk was a red smear from foot-trodden berries. Chickens weren't allowed out to eat them. (They'd blow away.)

These mulberry trees made fine sidewalk shade and the large bearing trees were well scattered over that wind swept Kansas town.

The chief value of the locust tree was to make lasting fence posts. My father is credited with having erected one of the first wire fences in Monroe County, Indiana. After the old homestead was sold and I visited the farm the last time, the old locust posts were still good and appeared to be in condition for still more years of service. I was just a lad old enough to bother the hands by misplacing the hatchet or the hammer and scattering staples. Now I am past sixty-five and still going.

That old locust grove, though small, was quite a honey producer and a lovely sight when in full bloom. I remember quite well that when at their very best, the nectar would drip to the grass below in the early morning before the bees and the sun were up to gather and dry up the excess moisture.

Several times during the period when I was gathering locust seed, I tried and failed to get the seed to germinate. I did not know how to treat it, nor did I know that my father had tried also and without my knowledge. He wanted more fence posts. I wanted more honey as that was during my early life as a beekeeper.

It was about this time that The Agricultural Department at Purdue University began their campaign to educate the farmer by holding farmers' institutes in every Indiana county. At about the first or second institute held at the Bloomington Court House, there appeared on the program a man from Cincinnati by the name of Waldo F. Brown who talked on the subject of growing amber sorghum for stock feed and growing the farmers' own fence posts and a farm wood lot.

In these talks, which my father and I both heard, Mr. Brown told how to handle locust seeds to germinate them. I was enthusiastic to try growing locust trees on a large scale. The institute was held in the winter time and my father thought that year's seed would not be fit to try, but I hunted the bluegrass sod over thoroughly, gathering up all the scattered seed I could find. I succeeded in getting quite a lot of pods that had not yet blown from the trees and altogether I felt I had plenty of seed for a big try if the seed would only grow.

Father and I then tried Mr. Brown's direction to test some of the seed to see if they were any good. To my delight, about 90 per cent of the seed tested proved to be alive. The test was to pour boiling water over this seed and allow the water to cool gradually. Those seeds that would swell and come to the top were then placed in the window sun between moistened blotting paper. If they sprouted and took root, they were to be considered as worth planting.

My father wanted to wait a year for the next seed crop, to make sure of no mistake but I didn't. He would not allot me a piece of ground for

(Please turn to page 238)

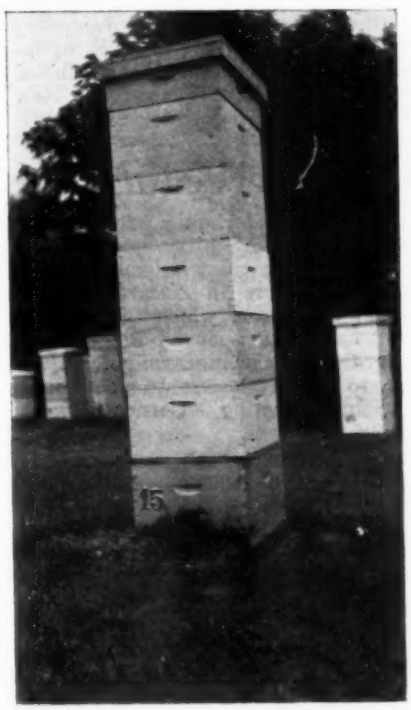
# Swarm Control and Honey Production

By H. Hodgson,
Wisconsin.

Hodgson's apiary in full summer beauty.

THERE ARE many factors that enter into swarm control and no system, however satisfactory it may be in one section, will be certain to work where conditions are entirely different. I have been able to try my method here in southeastern Wisconsin only, and it has given very satisfactory results in both my own apiary and in the apiaries of others who have tried it. Many may use the same methods I use but I have never seen anything published giving the complete system, and it is so successful that I think others may be interested.

The first thing that is necessary is to requeen the entire yard in August. I try to have this done by the twentieth. I raise a few queens some years from some particularly prolific, gentle queen, but it is, on the whole, much cheaper and better to buy queens from a queen breeder than it is to raise them one's self. I have queens from most of the better known breeders and practically all of them are good. Some will think it advisable to hold over a good queen and use her the second year. I have checked this rather carefully, and while it is possible for a queen to lay well the second year, and some do, some may break down just when they are needed most and supersedure or swarming result. For this reason I find that it decidedly does not pay to take the chance. No matter how good a pullet is, she never lays as well her second year as she did her first. Another misconception many have, is that a colony that raises itself a queen in June, either through supersedure or swarming, is headed by a young queen. She is a young queen that year, but the next spring she is in effect an old queen, even though only two months older than one introduced in August. She has laid heavily one year, and should be replaced in August.



Colony headed by choice southern queen. Picture taken July 13, 1934.

Hodgson apiary in winter of 1933-1934.

I winter outside in a hive body and a shallow or in two full depth bodies. I have in the last five years had practically no winter losses, and what losses I had were from colonies I had been experimenting with. I pack on summer stands and use pads made from tule for insulation. These pads are about three inches thick and are made a size to fit the two sides from ground to top of inner cover, the back, and then there is a pad that fits the top. Over the whole is wrapped a piece of "Sissel Kraft" paper. The pads will last indefinitely and the paper covering has to be replaced every second or third year. With these pads one can pack a colony in three minutes.

I leave my colonies packed until the end of May, as they can expand more rapidly when given this protection, although I may have added another super during the fruit bloom. In fact I give another full depth super to most of the colonies and repack after the supers are given in May.

The colonies are left with two or three hive bodies, the queen having access to all, until the honeyflow is on. I wait until the scale hive shows a steady gain of at least three pounds per day, then I sort the frames in the two or three hive bodies. Most of the colonies have more than fifteen frames of brood at this time, some up to twenty-five frames. I pick out ten frames as nearly full of sealed brood as I can find. I put these ten frames, with the queen in the hive body below an excluder, add a super and put the eggs and unsealed brood above the added super. I have had no swarms in five years from colonies run for extracted honey that were handled this way. I admit that there is some luck in this. I might have had a swarm now and then, if a queen had failed and supersedure cells had been started, but young queens are little apt to. I have been advised by many to keep good queens a second year. I have checked this by keeping over a few of my best queens and for a number of years I

have had some swarms each year from the colonies headed by these old queens. About one third of them swarm, and they are handled exactly as are those headed by young queens.

The Demaree system seems to me to restrict the queen too much. Any method I know of but the one I have given will limit the queen. If eggs and unsealed larvae are given below, she has to wait until it emerges before she has space to lay. If foundation is given, any good colony will draw it all out in 24 to 36 hours, and the bees will start to fill the hive body with pollen and honey, and thus restrict the queen in her egg laying. Foundation is best drawn out in the supers. Better comb results. In giving sealed brood, it emerges about as fast as a good queen lays after the peak of the brood rearing, and little or no honey is put in the brood nest. Of course this necessitates wintering in two hive bodies, the one given September being full of honey.

We have a long season here, the sweet clover and golden rod yielding sometimes later than September first, so that it is necessary that a full force of bees is kept in the hive, which it is impossible to do with a honey bound, pollen bound brood nest.

To produce comb honey by this method the entire system is the same up to the honeyflow. I sort the brood just as I do for the colonies to be run for extracted honey. I select the ten frames of sealed brood and put it and the queen in the hive body. Then I generally add three comb supers. Then I shake all the bees from the other twenty frames in front of the hive. The other two supers I give to some colony run for extracted honey. It is vitally necessary that there is a good nectar flow before the comb supers are put on as swarming inevitably results if this is done when nothing or little is coming in. But if a flow is on, it is a pleasure to watch them occupy the supers. No bait sections are necessary. I have seen eighty-four sections entirely drawn out in thirty-six hours, not filled, of course, but the wax work done. I use full sheets of thin surplus.

In comb honey production one gets some swarms, but I get fewer by this method than any other I have used.

As to results, last year was just a fair year in this section. I averaged a little better than 250 pounds net surplus to the colony. Besides this I left either a shallow or full depth super of honey on each colony for winter. I ran ten colonies for comb honey and took off 1600 well finished sections, and then these ten colonies gave me at least one full depth super of extracted honey apiece. I only produce comb honey up to the middle of July. I cannot get well finished white sections after that so put extracting supers on them.

In reading over what I have written I notice I have left out one important thing, that is, the necessity of good combs in the brood nest. They should be wired so that there is no possibility of sagged cells, for the queen cannot utilize an off shaped cell. I use nothing but Dadant's wired foundation, as it is the easiest to use and gives perfect comb that stays perfect, besides being cheaper than other foundation, if the time necessary for good wiring is taken into consideration. If other foundation is used see that a good job of wiring is done, and if care is taken, suitable brood combs should result.

I have a small apiary, about sixty colonies, as other interests prevent me from devoting as much time to bees as I would like. I use standard ten-frame hives. As I stated in the beginning of this article, I do not believe this system is the best system for all sections, but I believe those who try it in sections where conditions are similar to those here will see its merits.

## Legislation in Nebraska

Beekeepers are attempting to tighten up more on the burning issue. Legalizing burning without pay. Thus the matter is left entirely up to the inspector. This is, of course, more or less debatable. The registration of beekeepers evidently was considered not worth including in the bill now before the legislature on the pretext that the assessors are now required to list bees. This is left to the whims of the assessor, however, and if he considers the uncared for colony not worth the $2.50 valuation placed on bees, he simply passes them by and no record is left for the inspector to find such property.

We have had no inspections in Howard County for the past several years, the inspectors claiming that funds were not available. Further investigations showed that these assessments had been held up in the County Treasurer's office until they had accumulated $71.95, a sum sufficient to have paid for the inspection of every colony within the county every year.

However, this delay of inspection may have brought its benefits since at least a few of the better beekeepers have learned to do their own inspection and clean up their own bees instead of waiting for the inspector.

The uncared for colonies are now quite well bought up and given better care than before. However, there are always many of these beekeepers who will neither sell their bees nor care for them. The inspector is practically indispensable in such a situation. There are other means of eradicating A. F. B. when we find we are forced to buy diseased bees or lose our own. If more of this were being done, we would have less need of legislation.

J. H. Sturdevant,
Nebraska.

## The Herb Garden

A different kind of garden book is "Gardening With Herbs for Flavor and Fragrance" by Helen Morganthau Fox. This book tells about the old-fashioned herbs commonly grown by our grandmothers and about others which are known in old world gardens. There is a good story also, of the author's experience in securing seeds of these plants and growing them in her own garden. She does not stop here, however, but goes farther and tells how she made use of them in her household. There is a chapter on herb teas which revives memories of a day that is long past but who can say but our children will not again find interest in them.

In the chapters describing the herbs the author describes each plant in detail, tells of its history and legends, its uses and also its culture. There is a long list of these plants beginning with the sweet flag, chives and dill, following down the line with camomile, horse-radish, wormwood, tarragon, borage, savory and tansy with many others.

This reviewer is hardly competent to discuss the chapters on cooking with herbs although many of the recipes look enticing. It is probable many things to be found here are not easy of access in the ordinary cook book. There are cocktails and soups, meat stews and what not?

The gardener who wishes to follow an interest aside from the every day kind of garden will find much of interest in this book which is published by the MacMillan Company of New York and which sells for $2.50.

## Outdoor Feeding

Our low grade honey after having been boiled for thirty minutes, diluted with ten times as much water, is fed outdoors in discarded sixty-pound cans from which the tops or sides have been removed. Place leaves or grass or anything available in the can to permit access to the honey without drowning. Corncobs work nicely for floats.

Care should be taken to keep the mixture and floats from souring. Our yards are well isolated from other yards, otherwise the outdoor feeding would not be advisable.

Ethel Strayer,
Nebraska.

[Boil the honey in a covered vessel, for honey which slops over will not be sterilized. There is always danger of disease when using unsterilized honey from a source not known.—Ed.]

# HONEY PLANTS

# Varieties of Alfalfa

IN VIEW of the persistence with which the beekeepers scattered the seed of sweet clover it is a bit surprising that they have not shown more interest in the spread of alfalfa. While alfalfa is a very important source of honey in the region west of the Missouri River and in a few localities eastward, bee men have had but little to do with its popularity. Alfalfa has become widely distributed because it is a valuable forage plant and through the interest of farmers. Numerous varieties of alfalfa are now offered in the markets but most of these are special strains of the common alfalfa, **(Medicago sativa).**

Alfalfa apparently came originally from south central Asia and has been carried to most of the important agricultural regions of the temperate parts of the globe. As a result of natural adaptation to the regions in which it has been grown, strains which manifest peculiar characters have appeared. Thus it becomes important to secure seed of a strain adapted to the peculiar conditions of the section where it is to be planted.

### Grimm Alfalfa

In the north central regions of Iowa, Minnesota, the Dakotas and Nebraska, hardiness is a most essential characteristic. Winter killing is a serious problem to the farmer. Thousands of acres of alfalfa are killed every severe winter.

In 1857 a German immigrant named Wendelin Grimm settled in Carver County, Minn. Grimm brought with him a few pounds of alfalfa seed which he sowed on his new farm. Some of the plants survived the severe winters and from these the seed was saved for increased acreage. Through a long series of years the seed was selected from this importation until the strain became well known throughout the Middle West by the name of the man who brought it from Germany. It is not a separate species but simply a strain which has been selected over many generations for hardiness.

There is a tendency of the taproot to branch which probably accounts in part for its superior hardiness. Wherever winter killing is serious Grimm alfalfa is to be preferred but it yields less forage in the warmer and more humid regions than does the common alfalfa.

### Turkestan Alfalfa

In 1908, Prof. N. E. Hansen visited Turkestan as a plant explorer for the United States Department of Agriculture. From regions with light rainfall and severe temperatures he selected alfalfa for trial in this country. These first importations gave so much promise in the cold and dry regions of the northern plains that much enthusiasm developed for Turkestan alfalfa.

This demand had the very natural result of setting seed dealers in search of an abundant supply. As a result seed from all parts of Turkestan came to this country and was sold to the trade. The most of this seed proved to be inferior to the common strains already in use here.

If it were possible to depend upon seed sold under this name as being of the quality of the original Hansen importation the Turkestan alfalfa would be valuable but due to the uncertainty of origin one is hardly safe to depend upon this variety as offered in the markets.

### Baltic Alfalfa

The Baltic alfalfa is very similar to Grimm and received its name from having been grown for a series of years in the vicinity of Baltic, South Dakota. It is reported as resistant to winter killing to succeed under similar conditions with Grimm. Not much has been heard of it of late and it is probable that the Grimm which it so closely resembles is largely replacing it.

### Cossack Alfalfa.

The Cossack alfalfa appears to be a hybrid between the common alfalfa and the yellow flowered Siberian alfalfa. It was brought from Siberia by Prof. Hansen in 1907. It has proved to be quite hardy and has received a large amount of advertising in the plains region. While the writer has tried Cossack alfalfa alongside of Grimm on his ranch in northern Nebraska, there was nothing to indicate any superiority to that variety. Both made a favorable showing and were about equally satisfactory.

### Peruvian Alfalfa

In the valleys of southern Arizona and California the Peruvian alfalfa is commonly grown. As its name indicates it came to this country from Peru in South America. It has winter killed very generally in all northern states.

In the region where it succeeds it is very productive and yields one or two more cuttings each year than the common forms. It is grown under irrigation and in a mild climate hence its distribution is limited to a comparatively small area. It becomes very woody when sown thinly.

### Arabian Alfalfa

Arabian alfalfa is another of the varieties suited to mild climates. It is not cold resistant, and is suited especially to the southern states. It is not drought resistant.

While it makes a good stand and is quite productive for about two years the plant is short lived and by the third year the stand will begin to thin. Since it does not seed freely it is rather difficult to propagate profitably.

### Yellow Flowered Alfalfas

The yellow flowered alfalfas from Siberia belong to a different species, **(Medicago falcata).** Unlike the common alfalfa there is a much branched root system instead of the one taproot usually recognized in the alfalfa plant. The crowns are set very low which provides some additional protection.

The first importation was by Prof. N. E. Hansen in 1897. Since that date numerous other importations have been made and the plants widely tested by the U. S. Department of Agriculture and at the South Dakota experiment station.

This species has been found in the wild state in England, Norway, Sweden, Austria, France, Russia and other countries. To secure the hardiest strains the explorers went to Siberia where it is exposed to both cold and drought.

Since it can be depended upon to make only one crop in a season it is nowhere generally cultivated. To date it is of interest mainly as an object for selection and hybridization. Prof. Hansen considers this species especially valuable for bees.

**Wild Alfalfas**

In addition to the above list of commonly cultivated forms, there are a number of wild alfalfas to be found in Asia. Perhaps some of these may yet prove worthy of cultivation and distribution in other parts of the world. Among the twenty-one species to be found in the far East may be mentioned **Medicago arborea** which grows to a height exceeding ten feet. Since it gets too woody to be palatable it is hardly as well suited to cultivation as the common alfalfa but it should be of great interest to the beekeeper for use in waste places. It is said to flourish in hot and dry situations where few other plants will live.

It has been grown to a limited extent in California as an ornamental plant. It produces large yellow flowers in abundance.

—F. C. Pellett.

Heather along a wooded path on the Luneburg Heath.

# Bees and Honey in Der Fuhrer's Land

By Esther Abbetmeyer Selke,
North Dakota.

**Readers have asked for material about beekeeping in other lands. Here is a good start.**

EVEN THE old Germans, fine upstanding fellows that they were, had a sweet tooth before they were corrupted by the Romans who took the home-brewed honey mead away from them at the mouth of the river Ems. Despite Rome's softening influence, the German bee products continued to be of great value through the Middle Age. In the Fifteenth Century, Cologne, Nuernberg, Breslau, and Prague had bee markets of wide reputation through Europe.

Then tree trunk hives were quite the thing. Nuernberg especially had thriving tree trunk apiaries. Naturally or artificially hollowed trees were occupied by the bees and the honey and wax were removed at stated intervals to be taken to the market place at Nuernberg. Even today ancient trees in West Prussia bear telltale evidence on their trunks of these artfully closed hives with boards in front, from which hung a large block. At Finckenstein this type of hive was used extensively until recently.

Bee culture has not stagnated in Germany. Trust a scientific nation to forestall that. When the many battles of the Seventeenth Century, especially the Thirty Years' War had all but wrecked the industry, Germany rallied to its revival by producing movable comb hives, bee societies, and schools for bee masters.

In some sections of the Teutonic republic, the season to get the best honey is spring; in some, summer—basswood, acacia, and clover varieties; in some, late summer, especially buckwheat and the altogether delightful heather. If the beekeeper finds he cannot get all of those at home, he simply takes his hives to the flowers.

Not an original idea, of course. The Germans try particularly to get the rare, dark brown heather honey, so the bees are taken to the Luene-

burger Heide in Hanover where the heather blooms. About 1905 Bee Specials were run at night in midsummer by the Hanoverian railroads and many a beekeeper sat up with his hives in the fourth class and deposited them on the heath sands within a few minutes after alighting from the train. Here beekeepers waited until enough of a crop had been gathered to make the trip pay.

The honey crop of Germany is an important though perhaps not sufficiently recognized agricultural product. One-tenth of Germany's thousand million dollars of agricultural harvests are attributable to honey and to the pollination of trees by the bees. The importance of honey has been growing gradually but steadily. fostered by many bee societies which have ranged themselves in a hierarchical system of local, district, provincial and national organizations. Working through their numerous Imkerschulen (Bee Culture Schools) they have done much to promote the industry.

Beekeepers' associations are actively working to maintain beekeepers on an even keel in a debt ridden land. They preach the value of honey to the public and stress the necessity of increasing its consumption. The agenda of the Wiesloch, Baden association has contained such subjects on its programs as migratory beekeeping, artificial combs, improvement of pastures, standardization of containers and appliances, bee schools of nearby Heidelberg, etc.

Associations have acted vigorously to lower the price of the foundation and supplies for their members to buy cooperatively in large quantities. They have insured members without cost against loss from theft, flood or fire. The associations have done much to improve the pastures by urging farmers to plant clover in greater abundance and bringing pressure to bear on city fathers to reforest with linden, catalpa, maple and other tree types instead of the unprofitable trees along the arbored avenues of Vaterland. They have cooperated with the state owned railroads with equally good results. The members have also become convinced that uniformity will do much to improve the chances of honey to compete with that of other lands.

It has been no easy task to carry on the work of these associations under adverse financial conditions. Dues have had to be reduced and local clubs have been forced to do their labor of love on about a quarter a year. The national association takes about three-fourths of the dollar dues and the local gets one-fourth. By cooperation with the agricultural chambers of commerce, the associations have been able to keep on.

One of their chief means of continuing successfully has been through the bee schools. In most parts of Pomerania, for instance, bee masters attended the May bee school of the province. A two-day course is given on queen raising or some similar topic and throughout the month until June, an intensive training in honey production is offered to farmers, gardeners, and new settlers.

For the two-day course, the charge is usually $2.50 but for members of associations, fees are reduced to seventy-five cents. Similar reductions are made for the full month's course. Pupils from trade schools are also trained in schools of this kind. Twice a week students of the Mannheim, Baden, Trade School are to be seen getting practical training in the handling of bees at the Imkerschule at Villa Waldheim, near Heidelberg.

There are two common types of hives, the movable frame hive and the basket or skep hive. Very few hives are found in tree trunks today as compared with the numbers which still exist in this form in the Swiss and Russian apiaries. The basket hives are most numerous on the heaths of northwest Germany and in Holland, where their adaptability to migration gives them an advantage.

But in general, however, since 1900, the number of straw or basket hives has been constantly decreasing in favor of the movable frame hives.

As you probably know, Pastor Dzierzon of Silesia was the first to introduce the movable frame hives in Germany and so for this country at least, he was the originator of the movable frame hives. Independently and almost simultaneously, Langstroth made the movable comb hive practical in America.

The German hives are generally placed with the openings to the southeast for exposure to early morning

Above, a tree bordered avenue in a Hanoverian town in the center of the German honey industry.

To right, a bee shed at the School, Villa Waldheim, at Heidelberg, Baden, Germany.

Shed on the Neckargemund, along the historic Neckar River, in the German Odenwald.

sun and warmth. They are kept well protected from winds. The early flowers are hazelnut, snowdrop, poplar and crocus. Sometimes feeding must be used in order to prevent early starvation. This requires sugar and is the source of the German beekeepers' complaint against the governmental tax on this product.

Once flowers bloom in verdant Germany, what honey they do gather! Not even in Italy can one get such a delicacy as the dark, German heather honey. All the dark honeys are good, buckwheat, basswood, fir-tree. The expensive heather honey, is hard to extract and, therefore, much of it appears on the market in the comb. This delightful confection comes from the heathers, especially from Luneburg. The "Tannen" or fir-tree honey is derived from the green fir cones and like the heather honey, has a strong taste.

May honey is better than autumn honey in Germany. The Germans consider the basswood honey their best.

Prices of honey vary according to ratings and localities. In general, honey is expensive considering the lean purses of the people and the low return for labor and it is not surprising that Cubans and other foreign honeys and cheap Polish honey finds their way to German tables. Very little reduction is given by merchants for buying in quantites but that it quite characteristic of all merchandise in the land of the Nazis where labor is cheaper than products.

Basswood, heather and pine honey sell in Hanover for approximately $3.50 for nine-pound pails, forty cents for a single pound. Five-pound pails retail at about $1.75. Similar prices hold for Holstein, Hessen-Nassau, Black Forest and Bavarian honey.

German agricultural chambers of commerce are trying to establish a national trademark for honey such as they have for cheese, butter, and eggs. The purpose is to gain respect for German honey on foreign markets. So far, however, little honey has appeared even on German markets with the little stamp of government approval.

Most of the containers there as here are trademarked by the concern placing them on the market. A label on a German container usually reads "This honey is chemically tested for its purity. Pure honey candies sooner or later but reliquefies in warm weather. Pure bee honey is best and the most natural healing and strengthening substance. A systematic cure for weak children, anemics, sore throats, colds, chronic coughs, etc. It is often used advantageously for stomach ailments. It is easily digested and assimilated by the blood without leaving residue."

While the quality of German honey is fine, its quantity is relatively small and we need fear no competition here from it. What German honey does go into export trade is from northwest Germany and sells for excellent prices in nearby lands. The supply does not equal the demand.

Much German honey goes into cakes indispensable for a Teutonic Christmas Lebkuchen, Pfeffernuesse and into marmalades, honey wine, mead. Drug stores use much for preparations like rose honey.

By 1903 Germany was producing millions of pounds of honey but she was also importing over $300,000 worth of it mostly a palm sap passed off as real honey.

The United States used to deliver the most honey to Germany but now Cuba and Guatemala have replaced us. In December, 1931, Cuba alone sent 289,600 German pounds to them as opposed to 95,600 in 1930.

Much Polish honey is imported into the highly industrialized province of Westphalia, where there are many Polish laborers who like light, mild honey of their native land. In 1930 Russia was the leading exporter of honey to Germany with 946,200 pounds.

# Two Year Old Queens Are Often Good

In the October number, Mr. Ferebee, page 442, under the title "How Long Will a Queen Last?" advocates the use of queens not over ten weeks old at the beginning of the honey-flow.

It is highly probable in the South where bees are more or less active thoughout the year, that frequent replacement of queens is advisable but here in northern Indiana we find colonies with two-year old queens often surpass those with young queens, both in colony strength and in the amount of honey stored.

However, I do not believe it pays to keep queens more than two years except especially good ones which may be kept over as breeders. Colonies with old queens are apt to become queenless in winter or early spring and die after the bees have consumed their winter stores.

Colony strength and performance depend largely on the quality of the stock. After requeening something like 100 colonies with purchased queens, we find that those with home-bred queens from superior stock have surpassed the others three to one in the amount of honey stored.

E. S. Miller,
Indiana.

# Revista Mensual de Industrias Rurales

This is the partial title of a new publication from our sister republic of Mexico—Revista mensual de Agricultura Ganaderia e Industrias Rurales—A Monthly Review of Agriculture, Breeding and Rural Industry —published at Hacienda Santa Barbara, Ixtapaluca, Mexico.

It has a section about bees and in the issues we have, the following subjects are noted: Honey as a Food, The Life and Habits of the Honeybee, Hives, Transferring, Bees and the Noble Art of Beekeeping. Mexican friends send to the address given for sample copies.

# No Honey to Germany

According to the Food Field Reporter no more honey may be shipped to Germany for a few months until an inventory of importations of foreign honey has been made. It will then be decided whether any licenses will be granted.

Germany has been a good customer for American honey and the closing of this market is to be regretted. In view of the high tariff which America exacts for the entry of German goods to this country we have no reason to be surprised, however.

# Buckeye Poisoning in Eldorado County, California

By Geo. H. Vansell, Associate Apiculturist, and Wm. G. Watkins, Field Assistant,
Bureau of Entomology, United States Department of Agriculture.

HONEYBEES are seriously injured by feeding on the California buckeye (**Aesculus californica** Nuttall)*, which encircles the Great Valley of California; and this makes dangerous much territory otherwise fairly well suited for commercial honey or bee production. During same intensive fruit - pollination studies in Eldorado County, opportunity arose for observing the exact distribution of buckeye. Since many bee men have suffered loss in the county, it seems advisable to make this information available.

Eldorado County is in the east-central part of California, lying principally on the west side of the Sierra Nevada Mountains, and is therefore within the general buckeye range. The western part of the county is a rolling plain of about 400 to 800 feet elevation; eastward there is a rapid rise to mountain peaks 9,000 feet high. The slopes above an elevation of 2,000 feet are covered by a thick growth of timber.

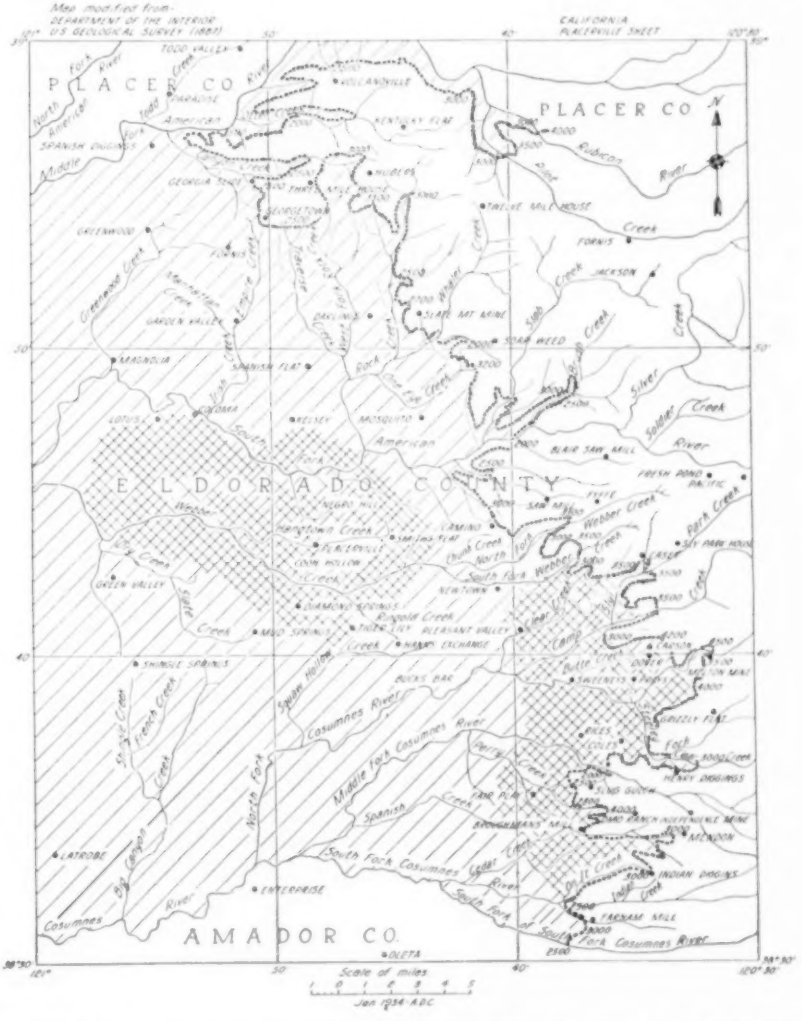
Drainage is carried mainly by a number of streams, both large and small, flowing down the slopes of the Sierras. The streams have in many cases cut deeply, forming precipitous canyons.

The occurrence of the buckeye tree varies greatly in different locations, as it depends to a marked extent upon the nature of the soil, direction of the prevailing wind, mean temperature, slope, exposure, and other factors. In some places it is found on only one side of a canyon or even only in sheltered pockets of one side. Frequently there is as much as 1,000 feet difference between the elevations attained on the north and south sides of a canyon.

The botanists record buckeye as occurring at altitudes between 0 and 3,500 feet, but in Eldorado County, where the cool air settles down from the snowclad peaks and the warm currents rise from sunheated meadows and plains in the east, the maximum elevation of the plant ranges from 2,000 to 4,500 feet. In the Grizzly Flat area, for example, buckeye is found at an elevation of 4,500 feet on the warm exposures of lava soil, while at the upper end of Webber Creek, the altitude at which this plant is found does not exceed 3,000 feet. The deep river canyons carry a strip of buckeye eastward into otherwise buckeye-free territory, and conversely some of the colder ridges are free of it down to about 2,000 feet. Therefore, the detailed distribution of this plant is puzzling to beekeepers.

The only approach to bee pasturage in these rough mountainous areas is over the highways, which are usually built upon the ridges. In order to avoid danger from buckeye poisoning, beekeepers frequently locate apiaries along these highways, at elevations above the range of the buckeye, not realizing that they are still within bee flight of it because bees forage to points at least 1½ miles from the hives and may therefore easily fly down to where the plant is abundant. The same general conditions exist along the entire line of Sierra Nevada foothills from Kern County to Shasta County.

A map showing the distribution of buckeye in Eldorado County has been prepared by the authors after close study of the numerous canyons and hillsides. A large number of localities are indicated in order to increase the usefulness of the map for any part of the extensive range. Similar maps for the other counties would




A map of buckeye distribution in Eldorado County, California. Single cross-hatching indicates occurrence while double cross hatching indicates great abundance. The heavy dotted line shows the eastward and upward limits. A difference of 500 to 1,000 feet can be seen between the north and the south slopes of certain stream canyons.

*Vansell, G. H. Buckeye poisoning of the honeybee. Calif. Agr. Expt. Sta. Circ. 301, 12 pp., 1926.

**Table 1.**—Partial record of beekeepers in Eldorado County, Calif., with dates of endeavor and other data. Prepared by Wm. G. Watkins, County Inspector of Apiaries, from his lifetime diary.

| Name - Place | Years | Colonies* | Kind of bees |
|---|---|---|---|
| R. Miles, Placerville | 1880-1890‡ | 400 | Native§ |
| H. G. Hubbard, Placerville | 1880-1912‡ | 200 | Native |
| S. L. Watkins, Butte Flats | 1885-1920‡ | 200 | Native |
| C. Schneck, Shingle P. O. | 1880-1923‡ | 150 | Native |
| Wm. G. Watkins, Placerville | 1885 to date | 200 | Native crossed with Carniolan and Italian |
| J. Waring, Pleasant Valley | 1889-1898 | 100 | Native |
| Miller Bros., Pleasant Valley | 1890-1900 | 50 | Native |
| G. W. Williamson, Sr., Gaylor Bridge on Webber Creek | 1890-1932‡ | 50 | Native |
| G. Wing, Green Valley | 1890 to date | 50 | Native |
| J. Glenn, Pleasant Valley | 1900-1902‡ | 100 | Italian |
| W. Davenport, Pleasant Valley | 1900-1905 | 50 | Native |
| T. Murry, Coles Station | 1910-1912‡ | 150 | Italian |
| C. Castle, Lotus | 1910-1913‡ | 150 | Italian |
| J. Birch, Pleasant Valley | 1812-1914 | 400 | Italian |
| G. Ahart, Bucks Bar | 1912-1916‡ | 100 | Italian |
| J. Sellick, Camino | 1912 to date | 50 | Native |
| R. Holly, Negro Hill | 1914-1915 | 500 | Italian |
| F. McKelvy, Cool | 1916-1918 | 250 | Italian |
| H. Baum, Placerville | 1916-1918 | 50 | Italian |
| D. Marks, Coon Hollow | 1920-1922 | 50 | Italian |
| A. Faust, Squaw Hollow Creek | 1890-1932 | 50 | Italian |
| G. Spencer, Chute Camp Road to American River | 1926-1929 | 50 | Italian |
| H. U. Miller, Shingle P. O. | 1926-1930 | 100 | Italian |
| E. Barrett, Shingle P. O. | 1927-1928 | 50 | Italian |
| A. Stoltzfus, Coloma | 1927-1932 | 50 | Native |
| T. Hagan, Gordon Valley | 1927 to date | 50 | Native |
| C. Hodkins, Shingle P. O. | 1928-1930 | 100 | Italian |
| G. Weyman, Coon Hollow | 1928-1930 | 50 | Italian |
| W. Wygersma, Placerville | 1928-1930 | 50 | Italian |
| H. Metcalf, Coloma | 1929-1930 | 60 | Italian |

*Approximate number of colonies at height of business.

‡Date of death or retirement.

§These native bees are probably of German origin.

furnish valuable information to those who may wish to utilize areas contiguous to buckeye.

Eldorado County has had an unusually large number of bees, brought in over a period of 80 years. Mr. J. S. Harbison at one time established a commercial-sized apiary in the creeping-sage range near Shingle Springs. Although he produced some honey, he abandoned this venture because the results did not meet his expectations. In 1869 he transferred his operations to San Diego County, where he became the first producer and shipper of honey in carload lots in California. Many other good beekeepers have established bee yards in Eldorado County, but the majority have given them up after a year or two, particularly since 1861, when the Italian bees were introduced into the state.

Table 1 lists some of the men known to have established themselves as beekeepers in Eldorado County, together with the approximate number of colonies, dates, etc. The short tenure of the Italian-bee apiaries is noteworthy. Bees such as those designated as "native" were submitted independently to W. J. Nolan and to Warren Whitcomb, Jr., of the United States Department of Agriculture, for examination. Both reported them as typical of the heather bee of Germany.

Some of the older residents of the county—for example, A. B. Kyburz, of Placerville, George W. Williamson, Sr., of Gaylor Bridge, and William Veerkamp, of Gold Hill—have reported that productive bee trees were common at a very early date but later became unproductive and scarce. Although the cause of this decrease cannot be stated with certainty, recent observations and experiments† indicate that the introduction of Italian bees had a decided bearing on the poisoning problem. As the more resistant "native" stock was replaced by intermixture with the constant stream of incoming Italian bees, buckeye poisoning increased. The failure of Italian bees moved up from the Central Valley is demonstrated almost annually in the numerous deciduous fruit orchards. The area continues to be rich, however, in its succession of good nectar-yielding plants, and there is one striking case of continued honey production in the county through the use of dark bees, that is, Carniolan x German (so-called native) x Italian hybrids. The producer is still operating on a commercial basis after fifty years of almost continuous beekeeping in various parts of the county. He has given the Italian bees numerous trials, always with the same disastrous results.

Under existing conditions, German or Carniolan bees may be expected to give better results in the buckeye area than the Italians or Caucasians. Certain hybrids of the German, Carniolan, and Italian races have been shown to possess considerable resistance to the deleterious buckeye products.

Besides having a deleterious effect on bees, buckeye is reported to be definitely troublesome to live stock producers. Beekeepers are favorably inclined toward cooperative experiments to eradicate it from some of the promising bee and live stock areas. Because most of these beekeepers own no land, but obtain their locations on a rental basis, they are rather helpless without the cooperation of others.

†Vansell, G. H., and Todd, F. E. Resistance of hybrid honeybees to a plant poison in California. Jour. Econ. Ent. 25:503-506. 1932.

## Some of the Good Things in Uneeda Fruit Cake

Have you seen the attractive booklet distributed by the National Biscuit Company to feature their Fruit Cake for Christmas? It is printed in black, green, and red, on white stock with most appetizing illustrations of the cake—yum, yum!

The cake was distributed in a gay, red metal container, the cake itself wrapped in cellophane, a two-pound or a five-pound golden or dark cake. Either one keeps fresh indefinitely.

Why not? Read the contents—pineapple, cherries, lemon peel, orange peel, citron, raisins, pecans, **honey**, fresh eggs, fancy table butter.

Thank you, "Uneeda."

## A Good Idea for Outapiaries When the Owner Has Little Time to Give Them Attention

Provide two ten-frame Langstroth hive bodies for the brood chamber with queen excluder over them. Then place a double sheet of newspaper over queen excluder which will keep the heat in until the bees require more room. At the same time put on three or four deep Langstroth supers containing nine combs only, spaced equal distances apart, with a double sheet of newspaper between each super.

The bees will gradually ascend as they require more room and will tear away the newspapers so that at the end of the season the supers should be full of sealed honey.

Young queens are advisable to reduce posibilities of swarming.

W. J. Sheppard,
British Columbia.

# Late Winter Impressions from the Southeast

By M. G. Dadant,
Illinois.

**Here is the second part of Maurice's southern trip. We find the swamps and the bears and typical southern beekeeping conditions.**

But the winter trip did afford us an opportunity to see plenty of boxhive bees. Up in the Blue Ridge it seemed to me that every other little cabin had its log gum. The meetings showed me what fine work Prevost has been doing with his extension, and how well liked and popular he was with the beekeepers. This Sunday trip corroborated my impression that he has a lot of work yet to do.

The fine thing about the extension men, however, is that they have been able to keep bee diseases in check. American foulbrood is still segregated in relatively few localities, and European is on the wane, thanks to desirable publicity on requeening.

I imagine one of the problems of that region is the changeable late winter weather. The warm days induce brood rearing. The succeeding cold days with the cluster formation necessitates abandoning some of the brood, and consequently a severe loss in building up. To my mind winter and spring packing would help the situation. The question still remains whether the cost of such would be compensated by the gain in honey. Meacham, at the college, says it will.

And now to cross over to the coast country, the section with the alligators, the honey eating bears, the swamps and the sea foods. It is in this section that most of the larger beekeepers are located. The Piedmont has one drawback—that most of the good flows are in the spring, and there is a relatively long period of inactivity, for the bees, till the next spring comes. As a consequence, we find very few large beekeepers in this area. Somewhat different from Virginia which does have enough of a variety of clovers, etc., to make for large enough flows to warrant making beekeeping a sole occupation; as does Mr. T. C. Asher and a number of other Virginia beekeepers.

Even in the coastal plain I heard complaint of stoppage of surplus flows by July 15, which still leaves a long period till next surplus honey comes in. Some are overcoming this by moving. Others by more careful selection of locality. But most of them must be content with much less per colony average than in the heavy producing sweet clover sections. I would fancy that a one hundred pound average would be rather good even to the commercial producer there.

Near the swamps, bears are a menace. Mr. R. W. Scott, at Bolton, N. C., whose good wife was kind enough to care for us through another Sunday, has killed a total of thirteen bears in the past five years. Imagine tiptoeing behind Scott through one of his yards for fear of tramping into a hidden bear trap, with jaws that would snap an ankle bone that quick. As I backed out of the yard, I felt like I used to feel when a kid, scurrying out of the black night into the protecting arms of the lighted room and family.

Scott told me a good one about the backward neighbor who had visitors. In the conversation the visitor asked if she raised poultry. "Oh no," said the neighbor, "we planted some, but the chickens scratched them all up."

One thing which surprised me. We were in a country, settled 250 years or more ago, and yet, here are still some of the most impenetrable swamps in America. The Green Swamp of some 500,000 acres near Wilmington, N. C.; the vast Dismal Swamp of Virginia besides numerous others varying in size from a thousand to several thousand acres. Nor had I any idea that tupelo grew and produced honey as far north as Virginia.

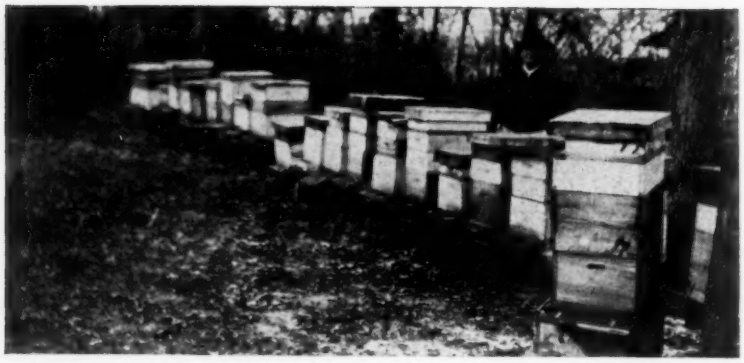
Forbidding, uninviting places are the swamps, and yet with an attraction, a fascination that is impelling to those who learn them. By the nature of the flora, your bees must be located on the edge of the swamp. By the nature of the fauna, the bears come out of the swamp for food. What more natural than that they should feast upon the delicious setup of towering hives of honey. And so the struggle; torn up hives, angry bees and beekeepers, fences, traps and guns.

The weather really warmed up while we were visiting with Scott, Martin, Jordan, Huggins and the Ratleys. Bees were carrying in pollen from early maple and alder here, and in Wilmington, pink japonicas were blooming (Feb. 8). As in eastern North Carolina, the influence of C. L. Sams was distinctly noticeable with the larger beekeeper as well as the small. Sams is the Bible of North Carolina beekeeping. Time was so short that we had to make back north

Above, peppy fifteen year old Hudson Babcock and his roof colonies.

At left, G. W. Scott and one of his great bear traps.

At right, T. C. Asher, Virginia's largest beekeeper.



At left, G. D. Ratley beside his colonies on the edge of the swamp.

Below, F. L. Huggins, standing by auto, outside a bear trapped yard.

to keep an appointment with Carey for a real oyster feast at Cape Henry and a quick trip across Virginia and away for home.

In many places we had heard the complaint of bitter honey, probably caused partly by the bitterweed which does grow in some sections of the Carolinas; perhaps, according to Mr. Pellett, most of the damage is done by the chinquapin. The chinquapin is not exactly a bitter honey, only so pronouncedly strong as to be almost bitter.

Another point upon which I hope to dwell more fully in another article is the assertion heard many times of the effect of soil upon the nectar secretion of the honey plants. This is so far an undeveloped field, but one which is destined to come to the fore in the future. We need more practical observations on this point, but most of all we need scientific study which can determine more about the interrelation of plants, soil, humidity, and nectar secretion.

## Painting Inner Covers

Mr. Fontaine, of Maryland, will find it an advantage to paint both sides of the inner covers. This will prevent swelling due to moisture absorption. When inner covers are so painted, colonies may be fed with friction top pail feeders by placing the inner cover upside down and the feeder over the bee escape hole. No other cover is needed. The hive must be nearly level to prevent the escape of the feed. As one beekeeper expresses it—"When the cans are found blowing around the apiary the beekeeper knows they are empty."

E. G. Carr,
New Jersey.

## Smoker Fuel

Oil waste from garages is often used. A small amount is of benefit to the fuel. Too much will not give good results. Oily waste will draw moisture in wet weather. Cotton cloths, rotten wood, damp leaves when available, are satisfactory.

Sumac bobs are cheap, easy to get if you live where they grow. They make more smoke, last longer, and never flame up. Puff as hard as you please and all you get is a cloud of white cool smoke less the disagreeable odor that you get with rags or many other things that beekeepers usually use. Just plain sumac bobs, the seed of the sumac, last year's tops are the part to use.

Smoke from wool rags is not suitable. It has a disagreeable odor and angers the bees. There are numerous other materials which make satisfactory smoker fuel too.

Ethel Strayer,
Nebraska.

## Minor Sources of Honey in New York

Here in the north foothills of the Adirondacks, water maple never fails to yield early honey. It begins just before Devil's paint brush, and although the honey is dark, along with paint brush, it makes a very popular flavor for our summer visitors.

Our land is more or less "run out" so the fields are red with paint brush bloom. Paint brush never fails to yield except in very wet weather. In fact it seems to do better during hot dry days.

In moving some bees out 15 miles north for buckwheat, I found it so dry buckwheat did not yield, yet colonies gained six or eight pounds per day from wild penny royal. At least that is what the natives call it; a vine growing like moss bearing a fine purple flower. Anyway, the honey was light color and a very fine flavor.

Maurice R. Shutts,
New York.

## Farm Income Increases

The Department of Agriculture says the 1934 cash income on the farm is six million dollars, representing an increase of 19% over 1933 and 39% over 1932. This increase is due largely to the rapid advance in the prices received for farm products during the past two years. Perhaps some of it may have been the result of forced marketing due to drought conditions.

Corn in January, 1933, was 27c a bushel; in January, 1935, 94c a bushel, a gain of 248%. Wheat was 51½c a bushel, now $1.00¾, a gain of 96%. Top beef steers were then $7.00, now $10.85, a gain of 55% a hundredweight. Top hogs were $3.20, now $8.00, a gain of 150% a hundredweight. Butterfat was .191c a pound, now .295c, a gain of 51%. Eggs were .203c per dozen then, now .31½c, a gain of 55%.

**Honey January 1, 1933, was .0425c a pound; January 1, 1935, .0625c a pound, carlots, a gain of 53%.**

This gain is therefore consistent with other farm products and neither too large nor too small. A price for honey too high will force buyers off the market; a price too low makes the business of production unprofitable and reduces the well established beekeepers. It's the old law, with its perennial ebb and flow—a good law to leave alone.

# *Lives of Famous Beekeepers*

## *By Kent L. Pellett.*

## G. M. DOOLITTLE — 1846-1918

**He was not only a good instructor, but he put his teachings into successful practice. Some men, like Langstroth, the peer of all instructors, never could make money from their bees. Doolittle always profited from his bees, and always succeeded in getting crops.—Gleanings in Bee Culture, 1918.**

G. M. DOOLITTLE, of Borodino, N. Y., developed the system of queen rearing that is in use today.

But Yankees who insisted on getting dollars out of everything asked him, "Does it pay?"

He answered them in his introduction to "Scientific Queen Rearing" with a typical dissertation. "I might answer," he said, "Does it pay to kiss your wife? to look at anything beautiful? to like a golden Italian queen? to eat apples or gooseberries? or anything else agreeable to nature? is the gain . . . to be judged by the dollar-and-cent standpoint of the world?

"In nothing more than in queen-rearing can we see the handiwork of Him who designed that we should be climbing up to the Celestial City rather than groveling here with a 'muck-rake' in our hands trying to rake in the pennies, to the neglect of that which is higher and more noble. . . . The question, it seems to me, in regard to our pursuit in life, should not be altogether, 'How much money is there in it?' but, 'Shall we enjoy a little bit of paradise this side of Jordan?'

"My style," he said, "I fear, is often like my bee yard, which in looks is irregular, while it attempts something useful I never could be pinned down to systematic work. I always did like to work at the bees near a gooseberry bush, full of ripe, luscious fruit, or under a harvest apple-tree, where an occasional rest could be enjoyed, eating the apples which lay so temptingly about."

He clearly painted himself a man, who, like Thoreau, preferred a broad margin to his life. But, he hastily added, he did make queen rearing pay in dollars and cents. He secured about $500 a year from his queens alone. He acknowledged the "general indifference to paradise on either side of Jordan." He, too, was a Yankee.

The years from the coming of Father Langstroth and the movable frame hives until the eighties when hard times fell upon the farm were golden years in beekeeping; and Doolittle made the most of those golden years. Honey sold at twenty-five or thirty cents a pound. In 1877 he made over $2,500 from sixty-seven colonies of bees. He had been a little doubtful about being able to make his living from bees, but that year he disposed of his other farming interests and became a "specialist in beekeeping." He made a good income although he never had over two hundred colonies of bees, and most years less than a hundred. His only other source of income was a garden and a few acres of fruit.

Gilbert M. Doolittle was born April 14, 1846, in Spafford, Onandaga County, N. Y., near Borodino, the town where he lived most of his life. His parents were Connecticut Yankees.

The elder Doolittle had a few swarms of bees when Gilbert was seven, and for the next few years the boy had a chance to learn the bee culture of the days before Langstorth and Quinby had turned it into a science.

His father "took up" the heaviest hives in the fall and killed the bees in the sulfur pit, then cut the combs from the hives. The whitest and choicest were set away on a platter, the rest were mashed and melted through a bag of coarse cloth in the brass kettle which was placed in the oven of the "high up old buck stove." It cooked there over a slow fire.

The mouths of the Doolittle children watered at the sight of the kettle coming out of the oven nearly full of strained honey. A piece of biscuit and honey, it was an offering for the gods! Gilbert, when he had grown old, still yearned for the delight of that old brass kettle. "That strained honey tasted better to the watering mouth of the boy, than does the present extracted article to the tongue of the old man." he said.

The hives were crowded together on a long bench, and Gilbert's job was to watch them during daylight hours in the swarming season. When a colony swarmed he and his mother beat on a tin pan and rang the dinner bell to settle them. The racket may not have settled the bees, but it brought Father Doolittle in from the hay and corn field to hive them.

One time the elder Doolittle saw the "king" bee and pointed "him" out to Gilbert. The "king" like a true commander led the bees out of the hive, he said. "A great long fellow, sure as you are born," thought the boy. But he had sharp eyes of his own and noted that although the "king" may have led the swarm out he was backward about leading it into the new hive, being the last to go in.

The elder Doolittle put honey-boxes on the top and sides of his hives, which the bees filled. He had honey to trade in town. He loaded it in the old green lumber wagon, putting the boxes on a blanket spread over straw and drove to the village, where he swapped for boots, shoes, groceries, and cloth for pants, shirts and coats.

Beekeeper Doolittle caused talk with his exploits with his bees, for hadn't he produced seventy-five pounds of honey from one hive? An unheard of amount!

Gilbert was told that he could have an escaping swarm if he could catch

it. He hived it, although he had to follow it to the top of a tall apple tree. He hefted the hive every few days and felt its weight increase. But thieves stole his honey and killed his bees. A short time later foulbrood got into his father's apiary, and all the colonies were destroyed. After that, Gilbert, who was growing into a tall broad shouldered fellow, had to content himself with watching runaway swarms as they passed over his head while he worked on the farm; and with reading an occasional article on bees in the "Rural New-Yorker."

But he did not bother about keeping bees for a number of years. Then there came one of those old-time bumper honey years in 1868. Bees filled the hives from top to bottom, clustered out and built combs under the benches, sometimes storing as much as twenty-five pounds there. There was much bee talk in the neighborhood, and Gilbert got the fever again. That winter he cut his foot badly. He was shut in the house until almost spring, with nothing to do but read. He had "King's Beekeepers' Text-Book." He could not rest until he had read Langstroth's book, then Quinby's, and had subscribed for the American Bee Journal.

In the spring he bought two colonies. Most people enter a new venture with enthusiasm, but beekeeping had for him an intoxication which lasted out his life. "Beekeeping for the next thirty years was little less than one round of endless pleasure," he said.

He subscribed to the magazines, bought all the books on bees, and was soon in correspondence with Elisha Gallup, an Iowa bee man and writer who contributed to the magazines. He did not hesitate to answer Doolittle's questions. He counseled the young beekeeper to have his colonies strong with bushels of bees, and to pay especial attention to the queen. All of importance in beekeeping centered around the queen, said Gallup. Doolittle was not backward about writing him often, and confessed later that he had a stack of letters four inches high from the Iowan in answer to his questions. Doolittle talked about Gallup so much that his friends began to call him "Gallup."

Before he had been keeping bees a year he was rearing queens and writing for the magazines. He went into the queen business in partnership with a neighbor. The neighbor grew the queens and Doolittle sold them, canvassing the farmers and introducing the queens in their apiaries. After a year, when he felt that he had learned the work, he began raising queens for himself.

The editor of the "Apiculturist and Home Circle" asked young Doolittle to contribute something to his magazine. Doolittle complained that he was not a good hand at writing. But he did compose an article with much labor, rewrote it three times and mailed it to the editor. It was published. He sent more articles and he was soon writing for other papers. He was a careful student of books and of hive affairs, and his happy expressions made him a favorite among the bee writers. For many years he was as frequently in print as any other bee writer, and there were many, including A. I. Root, Dr. C. C. Miller and W. Z. Hutchinson, who appeared often.

There was little pay. Samuel Wagner, first editor of the American Bee Journal, felt his expenses were all he could bear without paying the contributors anything. Most other editors followed the same policy. It was all a labor of love, or as Doolittle said, paying a debt to Gallup. "Many," he wrote, "have been the nights in which I have been up long after I ought to have been in bed, answering questions in order that I might pay the debt I owe E. Gallup." If Gallup could be repaid in kind, Gallup was well repaid by at least one of his students, for Doolittle had something from his pen in almost every issue of the American Bee Journal. He wrote regularly for Gleanings in Bee Culture and conducted a column, "Conversations with Doolittle," until the time of his death. At times he wrote regularly for five other magazines.

One spring Doolittle lost about half his queens, due, he thought, to poor quality. He set himself to the study of rearing better ones. After five years he wrote his "Scientific Queen Rearing," which gave the methods in use, and added his own improvements.

What vistas to beekeepers the movable frame hives have opened! What improvements have suggested themselves! The honey extractor, comb foundation, the bee smoker, the importation of better races of bees followed in the natural course, and all tended to elevate the level of beekeeping.

Not the least of these was the raising of queens. It was with the coming of hives that could be opened and examined that men were able to learn that queens could be raised from worker brood when it was placed in queen cells. This discovery, when applied, gave man control over the number of queens that might be raised, made it possible for one beekeeper to supply thousands of his brothers with queens.

Henry Alley was the first to follow queen-raising for a livelihood. But his system did not apply the principle in its entirety. He merely made the raising of queens by the bees themselves exceedingly easy. Doolittle was the first to take the worker babies from their cradles and place them in handmade queen cells.

A writer cannot point out this man or that and say: without him commercial queen rearing would not have come. But one can point to Doolittle and say: he contributed more than the others. Doolittle was not the first to rear queens in large numbers, nor the first to write a book about it. Alley was first. But Doolittle's book is still in print, forty-six years after its first edition; and nine out of ten breeders now rear queens by the Doolittle method.

Doolittle's method was not original with him. W. L. Boyd had written Gleanings in Bee Culture that he had reared queens by saving half built queen cells, or "acorns" found in every hive, and by placing worker larvae in these cells. A. I. Root had told how these cells might be made by dipping a rounded stick into melted wax. But nothing came of these ideas until Doolittle began making these cells in large numbers, placing larvae from worker comb in them, and thus raising queens by his own hands.

Doolittle was one of the few men, strong of arm and stronger of heart, capable of sacrificing themselves for the ones they loved. When his father became helpless in his old age Gilbert cut the number of his colonies, then 200, in half so that he would have time to care for him in the four years that remained for him to live.

Even greater devotion was required of him by his wife. A childless couple, they worked together until she was stricken with paralysis in 1912. He turned over his apiary to P. G. Clark and gave the last six years of his life to her. He kept half a dozen stands of bees and wrote a little for relaxation. And it happened that she outlived him.

How often our older beekeepers were philosophers! How often our older bee writers were moralists! One never knew when they would leave off writing about combs and bees and pollen for God and duty and sin.

Doolittle was one of those moralizing bee men, and preached from his pulpit, the hive. But he was a happy moralist, not one of those narrow souls with "thou shalt nots" cankered on his brain. Gladly he embraced bee and bird and sky.

Yet he wrote his farewell to the bee yard in ink tinctured with regret: "A sort of sadness steals over me, and I fall to wondering if both bees and myself will be alive to work so happily together another year. The merry hum, and the fragrance of the hives, which greeted me when coming to the yard during the summer, greet me no more. . . I seem to see the bees at work again . . . a picture fairer than thought; a picture fairer than a dream; a picture with ten thousand pearls glistening in earth's fairest sunlight, on one stretch of verdure green, and reaching out beyond the winter's vale to the bright spring again . . . "

## "Land O' Lakes Honey" Tells Why

Land O' Lakes Honey is packed by the Honey Sales Company, Inc., in Minneapolis, Minnesota. We do not know whether it is at all related to the same people who pack Land O' Lakes Butter and other products nor are we familiar with them, other than to report this instance sent in to us from the Honey Sales Company, Inc., by H. L. Eckdahl in a letter in which he states—"We think you will be interested in the enclosed list of ten reasons why you should support the American Honey Institute. Over 200 copies of this were sent to beekeepers in Minnesota asking their support. In addition, we obtained a quantity of pledge cards from the Institute which we have included in a display in our office."

Here is the list:

**Ten Reasons Why You Should Support the American Honey Institute.**

1. They are popularizing the use of Honey.
2. The Institute represents the entire Honey industry of which you are one.
3. Only through the combined efforts of beekeepers through an Institute of this kind can so much be accomplished.
4. If the Institute were allowed to die, there would be an almost immediate decrease in the sale of honey.
5. The Institute asks but little and offers much.
6. The Institute through research work is finding new uses for honey.
7. The Institute operated in 1934 on a $5,000.00 budget of which approximately $500,000.00 worth of honey publicity was received.
8. The Institute's five year plan of expansion must be supported to speed up progress.
9. The Institute is a vital part of the honey industry.
10. To put the greatest honey producing country in the world in first place in honey consumption.

Our hats off to Land O' Lakes. Thanks.

## Pound Jar Prices

Honey packed in Chicago is selling in New Jersey at 19 cents for a 16-ounce jar while the common retail price here is 25 cents for a pound jar. This is unfortunate in two ways. First, the beekeeper who produces the honey is not getting what he should; secondly, the cut price prevents New Jersey producers from making a decent profit since large averages are not possible here. We believe there would be a ready movement at 25 cents.

E. G. Carr,
New Jersey.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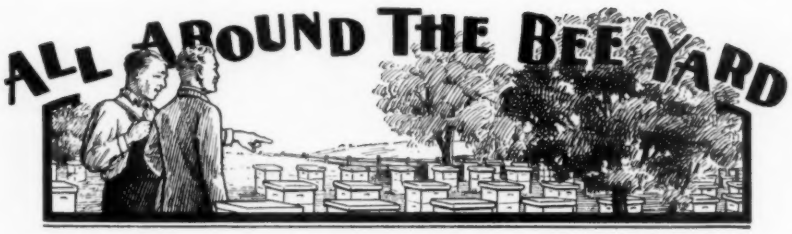


By G. H. Cale

RAINFALL here at Hamilton is above normal. Rain comes easily and frequently. In spots in western Iowa, surface moisture is lacking. Of course, farther west and south it is absent and the terrific, devastating dust storms of this spring have brought discouragement, ruin and abandonment to that country.

— o —

It is a season of extremes in reports of prospects. A letter from San Luis Obispo, California, says that for the last month there has been the best honeyflow in years with the bees at swarming pitch. Reports from the sand hill country of Nebraska indicate many of the bees dead. Many beekeepers have sold out or quit, and there are no prospects for a crop whatever.

— o —

In our own location, we have been unable to determine the crop chances. Where there is abundant moisture, last year's restricted clover seeding or failure makes the present year's clover bloom quite uncertain. Where moisture is short for this year, there may be considerably more clover but will it be of short bloom because of heat and the lack of moisture?

— o —

Beekeepers, therefore, under these uncertain conditions, are looking around more than ever before for a good sweet clover location. Some have taken long trips to find range and are prepared to move bees when they know where to jump. There will be more migratory beekeeping this year than ever before.

— o —

This brings up the question of whether or not beekeepers are wise to put much money in buildings and permanent equipment which may have to be abandoned because of location changes. Good, movable equipment and machinery, like extractors and honey handling equipment, may be bought freely because they may be taken from one place to another; but honey houses and buildings or real estate are probably undesirable investments for most beekeepers who are commercially dependent on bees.

— o —

Penn G. Snyder, in remarking about a letter in which I outlined several days of labor last season which lasted from sunrise to sunrise, says—"In my first shipment of 300 colonies from Porto Rico north, I started in at six in the morning. By twelve that night I had the trucks packed and on the way to San Juan some fifty miles distant. Fifty miles in Porto Rico is a different fifty miles than in this part of the world. We were over two thousand feet high. We frequently met ourselves coming back on the S and double S turns. We arrived about six the next morning and by twelve or one the bees were on board the steamship.

"Outside of the seat I had on the trucks coming down, I had not sat down from six one morning until about two the next afternoon when the ship sailed and did not get any sleep until about seven that night. I think it was thirty-seven hours in one stretch. I could not do it now."

I guess you have me backed into the corner. I don't even want to try it.

— o —

Eugene Gordon, North Platte, Nebraska, writes—"My best breeding queen has seen four years of service now. Gathered 350 pounds of honey and raised three sets of queen cells. Gone into winter with a large cluster of bees and 70 pounds of honey.

"She is a dark three-banded queen. The fall I put her in, there had been three queens in that hive in three months. I had the same experience with other colonies this year from another line of queens. In most cases I could stop this by using queens from the stock just mentioned."

— o —

Are you ever sure when you open a hive that the queen you see is the queen you know about? How old is she? Is she a supersedure queen? How many times have they superseded since the queen you introduced was accepted?

— o —

We have taken to marking the thorax of queens with a spot of Duco enamel; each year a different color. We know then on seeing a queen the year she was introduced. This color will last three or four years. Red was the color for 1932. Some colonies last year showed red-marked queens still laying vigorously. If the value of the queens in these colonies were determined entirely by the work the queens were doing, there would be no necessity for replacing the

queens. In fact they were not replaced.

In other cases, queens introduced the current season had been superseded because the queens present were unmarked. We have found supersedure to occur several times in a year. These old, long lived, vigorous queens would be the best breeders.

— o —

Last fall we worried a good deal about how the bees would winter on the late, heavy aster stores. Remember, last fall in the Middle West, bees gathered large quantities of late aster honey. The weather was so mild it was all thoroughly ripened and sealed before winter. This spring as far as we can see, there has not been any ill effects from aster stores. Since it was gathered so late in the fall, it had to be the first food used in winter. Yet there is no sign of unusual dysentery or unusual loss of bees.

— o —

In fact the bees came through the winter in better condition than they have for a number of years. The winter was colder, there were less stores to consume. Brood rearing had started by the 15th of March and by the 23rd of March there was a fair amount of brood, and by the 10th of April there was an unusual amount of brood. Then came a cold disagreeable period at the end of which the colonies had dwindled some and reduced the brood considerable. Right now they are not in as good shape as they were at the first of April.

— o —

This year, I notice the first pollen coming in on March 2nd. Undoubtedly there was some brood present at that time. Packed bees showed more brood but very scattered as in summer. These colonies will be too strong too early. I still think that packing in most winters has not paid in this country. A little protection in the lids perhaps or in an empty super, good queens, plenty of stores, and a sheltered location is all that is necessary to bring bees safely through winter this far south.

## Alberta Honey Grades

All honey imported into Alberta in inter-provincial trade will in future be graded by the Dominion Government Fruit Inspection Service. While Alberta produced honey sold within the province will not be directly affected, it obviously will have to measure up to the standard of the imported product in order to offer competition. An official of the Dominion department recently came out from Ottawa and spent a short time in Edmonton initiating inspectors in Alberta into the system of handling the twenty-one varieties of Alberta honey and imports.

F. H. Fullerton,
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# THE EDITOR'S ANSWERS

**When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.**

### COMBS FROM A.F.B. SUPERS

I have 250 or 300 extracting combs off American foulbrood colonies, never had any brood in them, burnt up all which had had brood. Would you treat these with formaldehyde? If so, what strength?

Or would you melt up the combs and boil the frames?

I have done both in the past, with varying results, but American foulbrood is so bad that new swarms and package bees in new equipment seem to be infected about as often; so it is hard to tell what the results are. I have been boiling thirty minutes or more with half can of lye to 35 or 40 gallons of water. I noticed in Bee Journal you say a few minutes with somewhat more lye than I use; could I cut the time down and be safe?

We have no inspection service worthy of the name. I have had bees commercially for eight years and there has never been an inspection in the yard.

What inspection we have had in the past never cleaned up or made them do so. So I could never see what good it was. My idea is that the inspector should either do the work or at least supervise it, for it will either not be done or else will scatter it more than ever.

I would be in favor of burning if we had regular inspection and made the farmers dispose of their boxes and frame hives which never had any foundation in them, so are only boxes after all. WASHINGTON.

Answer.—I would not bother with those combs, but would melt up the wax in them and boil them or singe them with a blow torch. It does not cost so very much to replace combs with comb foundation and you run less risks.

An inspector, as you say, must do the work himself, or see that it is done. Better be your own inspector. We have had foulbrood in our yards years ago and did away with it, by using the methods recommended. Do not be afraid to use fire wherever there is disease. The bees may be cleansed by starving them. But the combs, especially those that contain honey or brood, had best be destroyed. If you melt the combs in water and let it go to a boil, you will destroy all germs. But be thorough.

### EGGS IN QUEEN CELLS

Do queen bees lay eggs in queen cells or do the workers transfer the eggs to them? IOWA.

Answer.—As a rule, the bees put the egg in the queen cell or enlarge the cell after the egg is laid in a worker cell. I do not believe that queens lay eggs in queen cells because they appear to object to other queens being reared. However, could not assert positively that a queen never lays eggs in a queen cell. If you find out something positive in regard to this, please let us know.

### SWEET CLOVER

I would like to get the real low down on this sweet white clover for beekeeping.

Will you please send me the following information?

Show the correct name of all the sweet clovers annual and biennial.

Their value as a honey plant and for crops and improvement of soil.

Instructions as regards innoculation, etc.

Which is the best? How about Alpha sweet clover? BRITISH COLUMBIA.

Answer.—In answer to your inquiry about sweet clover we have sent you a bulletin of the United States Department of Agriculture which gives far more information than is possible in a letter.

The varieties in common cultivation are: **Melilotus officinalis,** a yellow flowered biennial form which blooms about two weeks earlier than the common white. **Melilotus Alba.** Of this common biennial white there are several selected strains as for instance the Hubam which is an annual instead of a biennial but similar otherwise. There are several strains of the biennial form also, such as the Grundy County which is not so coarse as the common form and which blooms earlier, nearly as early as the yellow flowered variety. The alpha clover is a many stemmed branching form somewhat resembling alfalfa. It originated in Saskatchewan and is very promising although not as yet tried over a wide area. The annual yellow flowered sweet clover, **Melilotus indica** is less valuable and is seldom planted much in the northern regions where the others are regarded as more suitable.

Constructive selection and breeding of sweet clover is of recent duration and new strains are frequently offered. There is great promise for the future in this direction and it is to be hoped that a perennial form will be found which will be of special value as a permanent pasture crop.

Prof. N. E. Hansen of the South Dakota Experiment Station brought from Siberia a white flowered sweet clover which thrives with very much less moisture than the common kinds. This is of special value in the dry western plains area where drouth so commonly prevails.

### A SHORT MOVE

I would like to move my bees this spring but don't know just exactly how and when. I only want to move them about two rods. I am afraid to move them now on account of the colonies being at their weakest stage at this time of the year. Is there danger of them going back to their old location and becoming lost when they take their first flight after moving. Just what time of the year is best for a short move like this?

I will certainly appreciate and thank you if you will tell me how to do this. MISSOURI.

Answer.—To move bees a short distance is probably the most risky task you can undertake.

What you must do is wait till they fly freely during the day and then make them feel as if they had been compelled to swarm. Wait till fairly warm weather, when they can fly and get lost easily. Then pick out some day that is likely to be fair. Close their entrances in the evening or early in the morning. Then smoke them up pretty thoroughly, drum them, make them think that they are about to be driven from their hives, then release them after moving them to the proper place during the warm hours of the day, putting some obstruction in front of their door that will give them to understand that things have been changed. They will come out in large numbers and will look around and if there is nothing left on the spot that they used to occupy, they will get used to the new location.

One thing which you must avoid is to keep them closed up long enough to cause

them to smother. There is very little danger of that on cool spring mornings, but you must have it warm enough to have them comfortable and yet not hot enough to cause their combs to break down.

### APIARY

1. In arranging an apiary, provided one has the land area and no better use for it, is it advisable or good practice to space hives ten feet apart each way, or more, or less? Why?

2. Is there any established or standard practice for the number of colonies in a yard? In the last analysis this is doubtless dependent entirely upon the ability of the surrounding country to supply nectar and must be determined by trial and error.

3. The use of carbolic acid for freeing supers of bees has been mentioned in magazine articles recently; will you please describe the method in full?

4. In building a honey house in which both comb and liquid honey (per Mrs. Jensen), are to be stored after harvesting and before selling, should provision be made for keeping it warm in winter, and if so, what is the lowest temperature that should be aimed at as a continuous minimum?

5. Only two of my three colonies are fully packed this winter; the third one has a half depth super with a false bottom in it and a filling of dry shavings, on top of the brood chamber. Bees from this hive have flown on three occasions, while none at all have flown from the packed hives. On the first flying day, which was very sunny, 300 or more bees alighted on a snow bank some distance in front of the hive and died there. The snow bank was liberally stained with yellow excreta by these bees and others. Is this a normal experience and performance?

MICHIGAN.

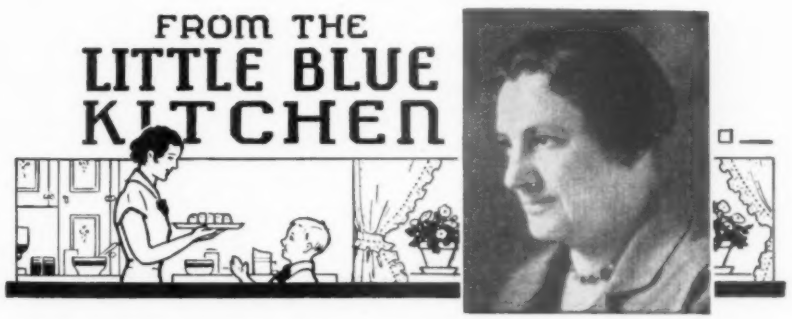
Answer.—1. By placing the hives some distance apart, one can make it easier to handle them. We have always placed ours in rows about ten feet apart, but with only two to four feet between hives. Then they can be easily isolated so that the bees won't mix from one colony to another. A shrub, a bush, a few flowers help to separate them so that they won't mix.

2. As you say the number of colonies in one place must depend principally upon the supply of nectar. A good location would support at least 100 colonies. We generally have 75 to 100.

3. An article describing the use of carbolic acid in taking off honey will appear in an early issue.

4. We have never bothered about keeping the temperature of our honey house warm. But if you can keep it above the freezing point, it may be a little handier.

5. Yes, this is a normal experience. It is not necessary to keep the bees so they will want to fly unduly.




NOW THAT the year is at the May and the early fruits are coming on our tables, Honey Lady has been anticipating the winter-jaded wants of Blue Kitchen reader appetites and trying out some delicious ways with honey fruit and other things specially palatable.

— : —

To begin with if somebody has a left-over cup of rolled oats and would prefer not to serve it hot on a lovely May morning she can conserve it and have something very delicious as a result. This is how!

**Honey Oatmeal Gems**

Sift, before measuring, 1½ cups bread flour.

Resift with 1 teaspoonful of salt.
4 teapsoonfuls of baking powder
¼ cup any kind of chopped nuts you may have on hand.

Then, blend 1 stiffly beaten egg, ¼ cup extracted honey and 2 tablespoonfuls melted lard or vegetable fat.

Now add dry ingredients in third portions, alternating with thirds of 12 tablespoonfuls of rich milk and stir all thoroughly at the last.

Fill greased muffin tins 2/3 full. Bake in hot oven.

**A Bee Line to Save Time**

Incidentally and in passing, if you have had trouble in having your muffins or cup cakes or anything baked in deep gem pans, you may avoid this by **not** washing them with soap and water, but by cleaning them out thoroughly with paper napkins, or other tissue paper; greasing them, and wrapping them up in oil paper till you want to use them again.

— : —

**Another Bee Line**

A way to find current household bills, lists of needs, etc., readily is to purchase a small "stick" file at any five and ten, and "jab" the scraps of paper on it. These little files hold everything secure and save no end of hunting time! Honey Lady **knows!**

— : —

A "different" little sandwich for the children's lunch basket can be made with whole-wheat bread, spread with butter, then with cottage cheese mixed with honey. This "spread" fairly radiates vitamin values also!

— : —

If you are having a little afternoon party or are entertaining your club the following recipe details a delightfully refreshing cool drink to serve with the "eats." The amounts Honey Lady is giving will make enough of the brew to serve one dozen nicely.

**May Day Delight**

The ingredients:

6 oranges
6 grapefruits
1 quart strawberries
Juice 3 lemons
12 tablespoonfuls or 1 cup of honey.

The Directions:

Cut the orange and grapefruit sections in two parts each. Halve each strawberry. Mix the fruits well, add the lemon juice and honey, previously blent. If you have ice cubes add two or three to each glass. A sprig of mint will add color and a "zest."

— : —

Another Cooling Sip.

**Honey-Orange Drink**

Ingredients:

1 cup water
½ teaspoon grated orange rind
2 tablespoons extracted honey preferably a mild flavored nectar)
1 cup orange juice
3 teaspoons lemon juice

Boil together the water, honey, and orange rind for three minutes. Strain, chill and add the fruit juices. Ice cubes add to the quality of the drink. This recipe serves two or three people. Doubling or trebling the amounts according to one's crowd can easily be accomplished, of course.

— : —

Here is a nice little "for-a-change" dessert you may like. It is really very, very good, and fine way to serve berries differently, and so cater to the perhaps jaded appetite of somebody in the family. It's called

**"Shredded Wheat Biscuit with Strawberries."**

When Honey Lady first "got hold" of this recipe the directions were to "sweeten the fruit to taste," so she used honey for that sweetening and the result was highly satisfactory. Well here 'tis!

"Prepare berries as for ordinary serving. Warm shredded wheat biscuits in oven before using. Cut or crush oblong cavity in top of each to form a basket. Fill this with berries, and serve with cream or milk. Sweeten to taste. (If you happen to have some sweet clover or other mildly flavored honey, use that by all means). Peaches, blackberries, blueberries, pineapple, bananas and other fruit, fresh or preserved, can be served with shredded wheat biscuit in the same manner."

Incidentally, a delightful change from the regulation plain, cold breakfast food and cream, can be effected by adding any of the kinds of berries mentioned, and mixing cream and honey to go over all.

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***American Bee Journal, Hamilton, Ill.***

### Illinois Loses McClure

J. H. McClure of Manchester, Illinois, was killed instantly at 3 p. m. Wednesday, March 28 when his car was struck by a Chicago and Alton passenger train.

Mr. McClure was born near Winchester in 1888. He married Miss Bertha Ash of Manchester, July 12th, 1911. He was a member of Union Baptist Church, Manchester; Lodge No. 229, A. F. & A. Masons, the Modern Woodman of America and Morgan-Scott Beekeepers' Association of which he was vice-president. For a number of years he was junior warden of the Masonic lodge. Mr. McClure was an extensive beekeeper.

Reported by Lawrence Fisher.

### Vigo County Meeting

This association held a meeting on Wednesday, April 17, with twenty-two beekeepers, and twelve of the ladies' auxiliary present. Report of the county fair committee announces that $100 has been allotted to the Apiary Section for awards.

Ora Smith was appointed to provide pilots for the State Apiary Inspector. Otis French, Ferd Havens, and Wm. Bridges, were appointed to meet with a committee from the Clay County Association to arrange for a joint Field Meet, June 22. The ladies' auxiliary will appoint one member to the county fair committee for supervision of the honey cookery contest.

W. A. Pogue,
Indiana.

### Annual Election of Eastern Massachusetts

The Eastern Massachusetts Society of Beekeepers on March 2nd elected the following officers: president, George A. Meigs, Essex County Agricultural School, Hathorne; secretary, Lewis Konces, 57 Battery Street, North Abington; member of the board of directors, M. W. Barrett, Hyde Park.

The Society went on record by a close vote as favoring the bill to compel the registration of all those who keep bees. President Meigs in his address pointed out that beekeeping was to become of increased importance in the future due to a greater demand for bees for pollination purposes and a greater demand for honey in health foods, confectionery and bakery products.

Howard Potter, Jr.,
Ex-secretary,
Massachusetts.

### The Canada Fruit and Honey Act

The Canadian government has recently put into effect a law which requires that all fruit and honey for export or shipment from one Province to another be classified, graded and packed according to regulations of the Department of Agriculture. Each shipment must be accompanied by an inspection certificate.

The act also provides for inspection of the sanitary conditions of all premises where honey is packed, and for the registration of all persons engaged in the packing of honey and fruit.

The act describes in detail the quality of product which is permitted under each grade and insures a uniform product going to market.

### California Campaigns for Membership

J. A. Schlotthauer, Chairman of the Membership Committee of the California State Beekeepers' Association tells us of the plan to get a thousand members to the State Association. The campaign is under way now and ends May 31st. The membership fee of $1.00 pays for 1935 and each member is entitled to any of the four bee journals in the country at 50 cents each. The person obtaining the most members may receive a liberal prize if plans go through. A pamphlet "New Kinks and Shortcuts in Bee Culture" is to be printed to sell at 50 cents and to be given as a premium to new members.

### Yakima Code

Members of the code committee of the Yakima County Beekeepers' Association have placed a draft of a honey code for Washington in the hands of Wesley Williams of Wenatchee, district manager for the apple growers' code and district manager of the melon and tomato code in western Washington. He will write the framework of it and the committee will put into it such provisions as are pertinent to honey marketing. Incorporation of provisions controlling traffic in honey produced outside the state is contemplated. J. P. Espey of White Swan, is chairman of the committee.

I. L. Neill,
Washington.

### New Officers in Yakima

The Yakima County Beekeepers' Association has chosen the following officers: C. W. Higgins, Wapato, president; J. B. Espey, White Swan, vice-

president; R. C. Immele, Toppenish, secretary-treasurer. The Association voted to ask for the elimination of registration fees in a bill before the state legislature, proposing fees of $1.00 a colony up to ten colonies, and five cents for each additional colony.

Honey marketing agreement conditions were discussed. According to the plans, if adopted, producers who signed must furnish figures on cost production.

Inspection showed that Yakima County has 275 apiaries, 11,900 colonies. There were 222 cases of American foulbrood.

I. L. Neill,
Washington.

## Institute News Notes

The American Honey Institute moved the first of the year from its one room office to a two room suite, much more satisfactory and already the full time staff members and the half time assistant are finding it possible to turn out more work because of adequate desk, shelf and file arrangements. An invitation is extended to all beekeepers and officers to visit the Madison office whenever in the city. The number is 304 Commercial State Bank Building, telephone Badger 2380.

### Hats Off to Florida

M. E. Darby, Secretary of the Florida State Association writes "Enclosed find one hundred dollars as a membership of the Florida State Beekeepers' Association, being the net proceeds from sale of honey exhibited at the Tampa Fair." Perhaps more honey exhibits could be handled on this basis in other states.

### New Recipes

Recipe testing on the prize winning combinations has been started and when all twenty-six recipes have had their final checking, they will be included in the new "Hundred Honey Helpings."

Contact work to secure pictures from food companies who have given special cooperation was started in January. The Institute hopes to have this new book illustrated with attractive pictures of food services containing honey. Several food companies have already sent excellent food pictures.

### County and State Fairs

Beekeepers' associations in California, Illinois, and Indiana are making early preparations for apiary and honey culinary exhibits at their state and county fairs. The Institute is assisting in planning proper score cards for judging honey food entries. Unless you make known the importance of a honey culinary section to the fair officials, you will not get an allowance for such a department. Ample space and premiums are usually provided when an organized request is made.

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Many of our breeding queens were procured by selection of the best out of thousands of honey producing colonies. We have several branches located in the Northwestern states where we produce honey and this gives us an excellent chance to test our strain, not only for honey production but for wintering qualities and climatic suitability.

We guarantee satisfaction in every way, prompt shipment and full weight packages. No charge for clipping queens.

**2-lb. Packages with Queen $2.45 3-lb. Packages with Queen $3.15**

**Untested Queens, 75c each. Tested Queens, $1.50 each.**

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We ship only young, vigorous, laying queens, the best that experience and careful selection can produce. We operate a chain of apiaries from Tennessee north. We rear the queens for our own northern apiaries and we guarantee them to please you.

We use no baby nuclei. All queens are reared in standard frame, large, strong nuclei, two nuclei to a ten-frame hive. Our nuclei are honey getters. Our service is prompt or your money back.

**Regular stock—75c ea. Nov. 1 to May 31—50c ea. June 1 to Oct. 31.**
**Select Tested—$2.50 ea. Nov. 1 to May 31—$2.00 ea. June 1 to Oct. 31.**

Select tested queens for breeders by special arrangement.

Queens for export will be carefully packed in long distance cages but safe delivery is guaranteed only in North America.

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| **Tested** | **1.50** |

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| **Select Untested Queens** | **$ .75 each** | **$ .50 each** |
| **2-Pound Package with Queen** | **2.45 each** | **1.95 each** |
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| **Each Additional Pound of Bees** | **.70 each** | **.60 each** |

**For Queenless Packages take away price of Queens.**

**BANTA & WIRE, Los Molinos, Calif.**

## Black Locust Tree Seed

(Continued from page 218)

an extended planting, so I had to content myself with an out-of-the-way place among fence corners and along the roadside. This planting did so well that my father now lit in for all that he was worth; he for fence posts, and I for honey.

I gathered a good quantity of seed that fall. Kansas got none that year. My father set aside three acres of fairly level tillable land. This was planted by hand in rows three and a half feet apart and the seed eight inches apart. The seed was "hotwatered" as described above and spread very thinly on canvas and kept moist with sacking and old rags. The ground below was kept wet and the sun had full sway. Everything went well but I am here to tell you that I was mighty glad when that planting job was done and so were all the rest of the family for all hands were pressed in.

The little seeds were hard to pick up and when the picking up was done, they were hard to let go of. They were covered with one's foot, shallow, and pressed down, and a litte loose dirt spread on top. We were favored with a good rain in time and had the satisfaction of seeing as fine a stand as one might wish. There were many missing places, of course, but we had planted so closely, that a very good stand was obtained anyway.

The little trees were weeded by hand in the rows. The corn cultivator was used five times over the three acres, and then all weeding and cultivating ceased for that year. The rows got two cultivatings the following year, but no hand cultivating or weeding.

When the trees were a year old, we thinned them down to sixteen inches apart in the row by pulling them up, roots and all. The tap root was sometimes hard to make let go and we were glad again when the thinning job was done. It was here that the returns for our labor began to come in. It was at this time that "pea sticks" were in demand. The city dweller who had gardens used all sorts of things for trellises for pea and bean vines. Sales to city gardeners were easily made. This was the period before Burbank or some other horticulturist had produced the dwarf pea and bunch bean.

From then on, the trees were cut and thinned out from year to year. As they grew large enough, they were sold for tall wigwam trellises or for weaving into slatted or picket fences, for clothesline prop poles, grape arbor posts, shade poles and finally for posts. At the end of ten years only the poorest, roughest trees were left and a thicket of sprouts where the roots sent up shoots.

My crop of honey was next to nil but my father kept a more or less

accurate account of his sales until the amount passed the seventeen hundred dollar mark. I had to content myself with the nectar secretion from the old trees and from those I had set in out of the way places.

Where can one get seed? Indiana has a forest tree nursery down on the Ohio River in Floyd County, I think it is, or else Clark County. I would write to the Agricultural College at LaFayette, Indiana, and I am quite sure they will be able to supply the information. I think the black locust will do better in Nebraska than the Vitex tree does in Florida. The locust tree is a deciduous tree and does not grow, to my knowledge, in Florida.

# A Comparison of Methods and Time

(Continued from page 215)

Colonies of uniform strength were left undivided to act as checks.

Summarizing the table, it is fairly evident that over a period of six years, the total crop may be increased by half the amount when colonies are divided. Average yields per colony in all methods are sufficiently increased to pay for the extra labor involved.

In comparing the time element, the average yield from the parent colonies divided early, is lower, with one exception (E), than the average yield from the late divided colonies. However, the early increases, on the average, produced more than late increases. Depending upon the season, the availability of young mated queens and general conditon of the colonies, it is evident that increases should be made early; preferably, six weeks before the main honeyflow begins (May 1 to 15).

### Discussion of Results

It is fairly evident that the questions propounded under "Value of Increases" may be answered as follows: The average commercial beekeeper does not realize the potential value of artificial increase and if he does, the time element (date of dividing) has not been sufficiently considered, so that the venture has not been a decided success.

The majority of strong overwintered colonies build up rapidly in the spring and obtain their maximum field force by the first week in June. The honeyflow at this time is small so the effort of the colony is expended fruitlessly without increasing the yield and swarming tendencies become evident. The dividing of a strong colony in May will act as a check on the swarming tendency and provide an extra producing colony so the parent colony is prevented from reaching its maximum strength before the main honeyflow and the efforts of the early surplus of bees are turned into profitable channels by placing them in another hive at the right time.

Practically every year, as mentioned previously, with the exception of 1930, all methods of division showed a decided increase in total crop over that produced by the undivided colonies. The question naturally arises, "What is the average profit per colony, divided, above the amount produced by colonies, not divided?" On the basis of the six years' average production from parent colonies and their increases, calculating the value of honey at .07 per pound, method "A" exceeded the undivided colonies by $5.78 per colony; method "B" exceeded the undivided colonies by $2.37 per colony; method "C" exceeded the undivided colonies by $6.49 per colony; method "D" exceeded the undivided colonies by $6.20 per colony; method "E" exceeded the undivided colonies by $4.99 per colony.

The only money outlay in making the increases is the cost of an untested queen, which calculated at .85 (1934 Code Prices) still leaves a substantial margin for the labor involved.

Since package bees are largely used for supplementing winter losses and enlarging the apiary, it may be of interest to compare their cost and production with the potential value of artificial increases from overwintered colonies. The average yield from packages over the same period of years (1926-31) was 139.49 pounds per colony. This was 10.18 pounds per colony, on the average, less than the amount produced by undivided overwintered colonies. The cost of a two-pound package with untested queen (1934 Code Prices) was $2.65 plus transportation (approximately 70c per package) a total cash outlay of $3.35. The total income, on the basis of 7 cents a pound would amount to $9.76 per package on the average.

Assuming that the amount of feed supplied per package and increase was the same, the increase would necessarily have to produce, on the average, 103.6 pounds per colony to net the same returns as a package. However, on a package the total return, on the average, represents an increase of 291.3% on the original outlay whereas on an artificial increase, the total return (basis 103.6 pounds), on the average, would amount to $7.25 or an increase of 853.1% on the original outlay of 85 cents.

So the artificial increases returning an average of 35.3 pounds per colony would yield the same percentage of the original outlay for labor involved as that derived from the packages. Since the average yields from all increases, in all methods, range higher than twice 35.3 pounds per colony, the returns

(Please turn to page 245)

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| 2-lb. Package without Queen | 1.70 |
| 3-lb. Package without Queen | 2.40 |

PRICES AFTER JUNE 1st:

| | |
|---|---|
| 2-lb. Package with Queen | $1.95 |
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| Queens | .75 each |

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| Untested Queens | $ .75 each, any number |
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**AMERICAN RABBIT JOURNAL**
Dept. S. Warrenton, Mo.

# Crop and Market Report

**Compiled by M. G. Dadant.**

For our May crop and market report page, we asked the following questions:

1. Condition and loss of bees?
2. Condition of honey plants?
3. General prospects?
4. Honey all sold?

### Condition of Bees and Loss

Contrary to the reports a year ago, bees have come through the winter in very fine shape this year. We hear of no larger losses than 15 per cent in any instances although, of course, in the dry belt, there were quite large losses last summer and fall through starvation owing to the fact that the beekeepers had nothing to feed their bees.

However, the winter losses have been smaller particularly in the eastern sections, such as New York where winter losses last year were extremely heavy.

Throughout the entire South, conditions have been very favorable to maintain bees with practically no loss. The same thing has existed throughout all of the central western sections.

One thing which appears to be happening in the northern Apalachian section as well as throughout some sections of the North Central states, is that it has been pretty cool for bees to get flight and gather pollen and nectar. With previous warm weather, the bees started breeding heavily and as a result, there may be some shortage of stores in a good many sections and possibly some starvation where bees are not carefully watched.

California reports considerable loss of bees earlier and a very strong effort is being made by California beekeepers to put their bees in the very finest condition possible and in as large numbers as possible because of the impending large crop.

### Honey Plants

As to condition of honey plants, we meet a different proposition. Honey plants throughout the South are in very excellent condition with prospects, we believe, much ahead of what they have been in the last two or three years. This is particularly true in Arizona and in Georgia which have had some very short years. Georgia prospects seem to be better than they have been for a long time.

In the northeastern sections, conditions seem to be above normal and in the north central sections, particularly Minnesota and Wisconsin and northern Michigan, conditions are far above what they have been recently as these sections have suffered from shortage of rainfall previously.

In the central western white clover area, although rains have been very heavy, the honey plants are not in good condition. By that I mean the white clover honey plants as they were largely killed out last year by the drouth and it will take until 1936 to get another crop of little white Dutch clover in the pastures. Even the sweet clover seems to be short and many beekeepers report thin stands.

When we go as far as southern Illinois and south Missouri and southern Indiana, conditions seem to be better on account of better rainfall and as we progress to northern Iowa, northern Illinois and northern Indiana, conditions also seem to be better.

Probably the worst sections are the western plains where the dust storms have been terrific and conditions seem to be far below normal as to moisture. In the irrigated section contiguous to the Rockies, there seems to be ample moisture in the mountains for irrigation, more than there has been for a year or two.

On the Pacific coast, conditions are far above normal as to honey plants on account of the excessive rains.

### Prospects

All in all, we would consider the prospects in the northeastern section throughout the Apalachian region and in the entire South far better than they were last year. All this applies as far west as Pennsylvania, northern Ohio and northern Indiana with another belt of good prospects in northern Michigan, particularly in Wisconsin and Minnesota. Another belt of good prospect country seems to be southern Ohio, southern Indiana, southern Illinois and southeast Missouri.

As we approach the plains states, the prospects seem to be very much reduced although many beekeepers are reporting sweet clover still in a satisfactory condition if surface rains can be gotten soon.

As we get out into the western plains states, prospects cannot be good at present, even though there is some surviving sweet clover, on account of the extreme dust storms and the dry condition. Reports from Montana seem to be conflicting, probably due to the fact that the southern sections are suffering as is Wyoming from the extreme drouth whereas northern sections seem to be better. Idaho is at least normal and the prospects for California are booming. Nevada and Utah, as well as Arizona, seem to have far better prospects than a year ago.

In the Canadian provinces, conditions are at least normal in the east provinces and practically normal in the west. We would not be surprised to see better crops in Canada than in 1934.

### Honey Sold

Honey is cleaning up very rapidly, most stocks in the hands of beekeepers being because the beekeeper does not want to dispose of his crop at the price offered or is retaining part of the crop to be sure to have enough to carry him through until the new honey is off the hives.

We hear of no report of more than 20 per cent of the honey left on hand and most beekeepers are reporting nothing or very little left with the demand increasing. It looks like practically a cleanup on honey before the new crop is available. It is to be hoped that this is the case because honey exports have been extremely low and the domestic market apparently is going to have to absorb all of the honey.

### Summary

Summarizing, we would say that condition of bees is far better than it was at this same time in 1934, the condition of honey plants is also far better in general throughout the United States, being much reduced, however, over this time last year in the plains areas.

The prospects, all in all, are far better than they were a year ago although the western white clover sections where early rains did not occur in 1934 are going to be short this year unless moves can be made to sweet clover areas.

The honey is well sold out and new crops should be in demand immediately it is placed on the market.

We would warn our readers, however, that eternal effort is going to have to be made to boost for publicity for honey. From present indications, it does look like we are going to have a far better crop than we had in 1934 with very little chance of an export market. This means that the domestic markets are going to have to consume the honey or become glutted. It behooves every beekeeper, large or small, to do his bit towards supporting an organization like the American Honey Institute which is doing such a wonderfully fine work. We see it apparent everywhere in recipes published in different magazines, articles on honey as well as in the demand for honey on the part of bakeries and in many other commercial lines.

The writer would doubly urge every reader of this page to contribute to the American Honey Institute and boost it over for a bigger work during the balance of 1935.

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Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

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As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

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WANTED—Light and amber honey.
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DAIRY GOAT JOURNAL, Dept. 32, Fairbury, Nebr. Monthly magazine. 25c yearly; 5 months 10c.

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American Bee Journal, Hamilton, Ill.

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Inland Poultry Journal, Spencer, Indiana.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

# A Comparison of Methods and Time

(Continued from page 239)

for the labor involved would be twice that obtained for the packages.

### Spring Increase

The time for making increases cannot be set by rule of thumb because it depends on various factors, the main one being weather conditions for spring building up of colonies. The age of queens, their egg laying ability, the quantity of stores (honey and pollen) available in the hive and the availability of young mated queens, all have a bearing on the problem.

With the exception of weather, the majority of the factors are largely controllable by the beekeeper. Rigid selection of laying queens, decapitation of queens not up to par, the saving of combs of pollen and honey from the year before and a standing order for a certain number of queens for a few weeks in the spring from a southern breeder will go a long way toward overcoming the difficulties.

The dates of making increases varied considerably in the experiment due to the arrangement of the time categories and the influence of unavoidable variable factors. However, divisions made as late as July show an increase in production over undivided colonies but the yield of such late increases is invariably lower than those made at an earlier date.

It takes about six weeks for a colony with an active queen to build up to full strength before the main honeyflow. The honeyflow in southern Manitoba begins June 20 to 30 so increases should be made May 1 to 15 to produce optimum returns. Divisions made in May necessarily cannot be as strong in combs of brood and bees as those made later and the parent colony is apparently weakened to a larger degree but experience bears out the fact that the damage to the parent colony is more fancy than real.

### Fall Increase

Divisions may be made in August with home reared queens to increase the total number of colonies operated but the element of chance for success is lower than when divisions are made in the spring. Generally, weak colonies or those with old or failing queens are united in the fall to reduce the probability of losing them during the winter. On the other hand, the fall method of dividing has the advantage of utilizing the late reared bees, which are of little value as far as the parent colony is concerned, to help produce a strong increase for winter at little expense.

Even if the loss during the winter is high, those colonies that do come through provide ample returns for themselves, as well as those that died, and generally the increase can be divided again next spring and thus enlarge the apiary in half the time than if only spring increasing is practiced.

Another plan, which met with good success in eastern Canada, is to winter two nuclei in one hive. The double colony is prepared by placing a solid division board in the center of the hive and providing a portico entrance. Late increases are then brought together and these winter equally as well as ordinary colonies. The advantage here is that one hundred nuclei can be wintered in fifty hives and if all queens winter successfully, double colonies may be separated in late spring or early summer. A five frame nucleus already established, should have considerable advantage over package bees. From a limited trial in Manitoba, further experimentation along this line is warranted.

# Man's Winged Ally, the Busy Honeybee

This is the title of the article appearing in the April National Geographic Magazine and written by Jas. I. Hambleton, Senior Apiculturist of the U. S. Dept. of Agriculture. It is a twenty-eight page article, including eighteen black and white illustrations and sixteen full color reproductions of paintings by Hashime Murayama, staff artist of the National Geographic Society. It records many fascinating activities of bees—a fight between rival queens, bees defending their hive, and bees operating an air-conditioning system, etc.

The article itself by Mr. Hambleton is well written, interesting, short, and contains much information which should be available to every beekeeper. If you are not a regular subscriber to the National Geographic Magazine, at least send fifty cents to the National Geographic Society, Washington, D. C., for the copy of the April number containing this article. If you are interested in the magazine, ask them to send their literature about it.

# Package Bees for Honey Production

This is the title of a new bulletin just received from Professor W. E. Dunham, Extension Specialist in Beekeeping, Ohio State University, Columbus. In its twelve pages, Professor Dunham gives some sound and helpful advice to beginners with package bees, whether experienced beekeepers or not. He follows the package, step by step, from order to installation and then into the honeyflow.

He recommends the three-pound package for Ohio, to arrive about the time of fruit bloom. Experienced beekeepers will do well to get them by April 5th, in southern Ohio; by April 10th, in northern Ohio.

From actual result tests, a ten-week period is best for the package to build to honey gathering strength and make its largest return the first year. So, for white dutch clover, less can be expected in the way of a crop the first season, than from the later flowering sweet clover. Copies of this bulletin may be obtained from Professor Dunham at the address given above.

BRAZOS VALLEY APIARIES
CAMERON, TEXAS

# PACKAGE BEES

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*WRITE OR TELEGRAPH YOUR ORDER*

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Queens of each breed will be reared in yards well isolated from all other bees, and will be just as purely mated as would be possible if I offered queens of only one breed.

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| UNTESTED QUEEN, EITHER OF THE THREE BREEDS | 75c EACH |

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All Caucasian Packages—1 to 9, each **$3.00**; 10 to 49, each **$2.90**; 50 or more, each **$2.80.**

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Breeders, **$5.00** each. Export queens **$1.00** each. Delivery guaranteed only in U. S. and Canada.

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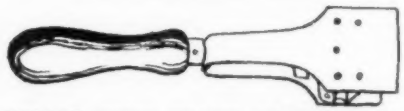

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# PACKAGE BEES & QUEENS

*GARON'S HONEY-FED DIAMOND QUALITY*

With the present backward spring, bees installed during late May and early June ought to produce a good crop of honey.

Our stock is a fast builder and a prolific producer.

**2-lbs. with Queen, $2.45** **3-lbs. with Queen, $3.15** **Queens, 75c ea.**

Light, well ventilated cages, health certificate. Drone excluded. Overweight. Square dealings.

**GARON BEE COMPANY -:- Donaldsonville, La., U. S. A.**

# Are You Providing Pulling Power?

We did not want to send out an S.O.S. this year; but, folks, we just have to swallow our pride and *make a call for help*. For some unknown reason, February and March income was *much below* that of 1933 and 1934, and there is *just enough money in sight* to run the Institute until April 21st.

Surely, after all the excellent publicity given the Institute by the bee journals and others the past three years, beekeepers *MUST* know what this organization is and what it is doing. But, in case they don't, the ANNUAL REPORT should answer *any* and *all* questions. Will you read it from COVER TO COVER and, if it all seems *worthwhile*, send in your renewal *at once.*

If your dues on the 1934 harvest have been paid, please fill in the coupon for 1935, or join the five year pledge group by estimating what you will be willing to pledge each year for the next five years.

Appoint yourself a membership committee of one and get at least one NEW MEMBER immediately. If half of our membership will each send in one new member within the next thirty days, the Institute's program can continue without interruption.

Your suggestions and criticisms will be gladly received.

Very truly yours,

H. F. WILSON, Chairman
Finance Committee.

University Station,
Box 2020,
Madison, Wis.

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(TEAR OR CUT HERE, TO USE THE COUPON)

The attached membership of $_____ manifests my confidence in the program of American Honey Institute. I will also try to get one new member within the next thirty days.

Name _____ Date _____

City _____ State _____

Remarks: _____

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(THIS SPACE CONTRIBUTED BY DADANT & SONS, HAMILTON, ILLINOIS)

# The POSTSCRIPT

## GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

I am much interested in an account of the honeyflows of southeastern Kansas. J. C. Elliott, of Columbus, writes me that wild cherry is the first flow that amounts to anything but that it is terrible stuff. Fortunately it is consumed in brood rearing before the good honey comes. Wild blackberry is the first honey of good quality and this is closely followed by persimmon which starts about the middle of May.

The season there is a long one with a honeyflow in May and another in late autumn. Maples begin to bloom by the end of February or in early March and winter losses are only such as come from queenlessness or starvation.

— : —

Several more letters about the behavior of buckwheat have been received. Nearly all agree that it yields best on sandy soil. A report that comes from Elmer Carroll is especially interesting. It reports that near Central Lake, Michigan, his bees near a buckwheat field on clay soil gathered no buckwheat honey while a yard six miles distant secured a surplus of forty pounds per colony from buckwheat which was growing on sandy soil. Such a difference in the same season with apiaries so near together is very convincing that sandy soil is best for a buckwheat honey crop.

— : —

From Henry Brown, of Cape May Court House, New Jersey, we learn that in Europe heather begins blooming about August first and continues till frost, while in New Jersey it begins flowering in May and continues until the end of summer. Heather requires acid soil but there are many large areas in this country where heather should succeed. There are a few places where it has become locally naturalized in the East. Tewksbury and West Andover, Massachusetts, Cape Elizabeth, Maine and some Nova Scotia points are among them. Mr. Brown's comment raises the question as to whether the longer period of bloom in this country increases or diminishes the honeyflow.

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The interest in Caucasian bees for northern regions continues to grow. Earl Douglas, of Woodsville, New Hampshire, reports that they do better than Italians by thirty to forty pounds per colony in the same yard. He expresses a personal liking for the yellow race but for his climatic conditions finds the grey bees better. It would seem quite natural if one race proved better for a particular environment while the other proved better adapted to a different one.

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Mr. Douglas also describes an interesting observation of the wood bee cutting holes in the spurs of the columbines, to be followed by honeybees who found the way open to the nectar in the punctured spurs. It often happens that honeybees find nectar through such openings which are first made in flower tubes too deep for them, by bumble bees or others of similar habit.

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There have been several requests for a place to secure seed of the coral vine or pinkvine which is one of the best nectar producers for mild climates. The seed is offered under the name "Antigonon" or Mountain Rose by Vaughan's Seed Store of Chicago and New York at 15 cents per packet.

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Many have written also to inquire where they can get the Siberian Pea-tree or Caragana. These shrubs of a height of two to three feet are offered by the Earl Ferris Nursery, of Hampton, Iowa, at 25 cents each. Several other nurseries offer them. They are among the best of ornamentals for the bees.

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From New Hampshire comes a letter telling more about the Chinese bamboo referred to by Vernon Gould on this page in the March issue. It is said that the attraction for bees is so great as to attract the notice of people who are not beekeepers. Once established it is very persistent, grows rapidly and has a tendency to spread. The question arises as to whether it has weedy characters which make it undesirable to introduce to new localities. If not it should be attractive to the bee men.

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In years past we heard much of the use of meal as a substitute for pollen in times of scarcity. Later scientific investigators concluded that the bees could not digest such starches and discouraged their use. Occasionally there is a report which disagrees with this conclusion. The question of substitutes for natural pollen never seems to be settled. Now comes a letter from Ernest A. Fortin, of Rougement, Quebec, saying he will try a combination of 50 per cent rye flour, 30 per cent powdered milk and 20 per cent sugar. Our readers will be glad to know the result.

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Dan S. Kitson who lives in central Manitoba, where as he says they sometimes imagine that they feel the north pole even though they cannot see it, reports that Caragana or Siberian Pea-tree does well even that far north and yields the finest white honey. Incidentally Mr. Kitson thinks that the behavior of buckwheat depends much upon the weather at blooming time.

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George H. Rea tells me of a wild vetch growing on sandy hills in northern New York. It thrives on land so poor and dry that it will support very little other vegetation. The bees work it freely and make a white honey of fine grade.

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Rev. W. J. G. Backstahler, of Evansville, Indiana, has retired from the ministry after 44 years of active service, to devote his attention to bees and flowers. What a combination for real interest. He comments on the number of names commonly used for the vining milkweed **(Gonolobus laevis)**, which grows abundantly in his vicinity. Known as bluevine, dry weather vine, devil's shoestring and numerous others there is much confusion as a result. He says it yields best in dry seasons. This is one weed which is really valuable to the beekeeper but a great annoyance to the farmer. It is rapidly spreading westward.

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This trying Mid-West climate with its extremes of heat and cold, wet and dry, make it very hard for the gardener. Last year many fine trees and shrubs died because of the drought. Every year we try promising new things at the Pellett Gardens in Iowa. This spring we are planting the new Polly peach which originated at the Iowa Experiment Station. It is said to be the hardiest peach so far developed and has fruited for ten years in the past twelve. It is a large peach of good quality.

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Through the kindness of E. L. Atkins, of South Jacksonville, Florida, we are able to try the coral vine or pinkvine, previously mentioned on this page. Since it is a tropical vine it must be taken up in winter but the fine specimen sent by Mr. Atkins should flower freely this summer. Along with it will be planted several other new vines which we have not tried before.

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Among the new fruits which we are anxiously watching are the new Brainerd blackberry which sprawls so freely that it will be necessary to use a trellis like a grape support; and the Quillen raspberry which is reported as disease resistant.

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The farm baby, Norman, nine months old, is beginning to move about a little. Maybe next year he can follow his granddad. Strange what a hold the grandkids have on one. His mother, Elizabeth (I call her Betty), is as interested as I in every new flower or garden plant. This summer I will do my best to make her a beekeeper.

FRANK C. PELLETT, Atlantic, Iowa.